

II. *A Monograph of British Braconidæ.* Part IV.  
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[Read November 5th, 1890.]

PLATE II.

XXIII. OPIIDES.

Clypeus either fitting closely to the mandibles, or raised in front so as to leave a narrow transverse aperture. Occiput concave, not margined (except in *Ademon*). Maxillary palpi 6-, labial 3—4-jointed. Mesothoracic sutures more or less complete or effaced. Wings ample, longer than the abdomen; fore wings with 3 cubital areolets, the 2d oblong or trapeziform, usually much broader than high; stigma lanceolate, attenuated, seldom elliptic or ovate; radial areolet ample; recurrent nerve everted, seldom interstitial and very rarely subretracted; prædiscoidal areolet usually petiolated. Radius and cubitus of the hind wings faintly traced or obsolete; basal nervures and præbrachial transverse generally distinct: the hind wings occasionally exhibit a pabrachial transverse nervure, more or less rudimentary (*cf.* in the fig., see "Horismology of Wings," Tr. Ent. Soc. Lond., 1885, p. 3). Abdomen subsessile or subpetiolated, usually short, ovate, or globose, somewhat more elongate in the ♂; suturiform articulation obsolete (except in *Ademon* and *Gnamptodon*), the other sutures visible. Terebra generally concealed or very short; rarely half as long, or as long, as the abdomen.

Head as broad as the thorax or broader; antennæ slender, filiform, usually longer than the body; face almost always carinated down the middle; mandibles large, often emarginate at the base beneath; palpi short (except in *Hedyllus*); vertex convex posteriorly, merging insensibly into the occiput; ocelli small, depressed; prothorax generally inconspicuous; mesothorax commonly without distinct sutures, but in other cases these are variously developed; often a rounded or oblong impression is seen just before the scutellum;\* abdomen showing 7 segments above, of

\* Not to be confounded with the transverse cancellated fovea at the base of the scutellum, which is common to most parasiti Hymenoptera.

which 2—3 are connate and much the longest; the 2d suture almost always invisible, except in *Gnamptodon*; 1st segment short, seldom more than  $\frac{1}{4}$  of the length of the abdomen, somewhat dilated posteriorly, narrower than the following segments, and variously sculptured. Radial areolet cultrate, ending not far from the extremity of the fore wing; stigma from ovate or lanceolate, becoming more and more linear and elongate until it occupies  $\frac{3}{4}$  of the metacarpus, as in the inferior *Alysiides*; 2d cubital areolet also elongate and attenuated in various degrees; usually the sides converge slightly towards the extremity of the wing, but sometimes they are almost parallel; 2d intercubital transverse nervure faintly traced or extinct; præ- and pobrachial areolets equal, or the latter somewhat the longer; cubitus more or less effaced after passing the transverse nervures. The legs offer no peculiarity.

The *Opiides* form a natural group of considerable extent, found in both hemispheres, more abundantly in the northern and central countries. They are well placed next to the *Alysiides*, from which some of them are not distinguishable at first sight; but the latter may always be known by their everted mandibles. Many *Opiids* also resemble the Bracons; but they have not the oral aperture peculiar to the *Cyclostomi*; they differ, moreover, in the habits of their larvæ, and in having for the most part a concealed terebra. They do not settle upon flowers, but frequent shady places, where they may be captured, though never abundantly, upon low plants in the neighbourhood of water. Their parasitism has seldom been observed, but Goureaux reared several from dipterous larvæ belonging to the genera *Chilosia*, *Cordyla*, *Tephritis*, and *Phytomyza*; and, according to Ratzeburg, they also attack Lepidoptera: not Coleoptera, for *Opius rubriceps*, Ratz., parasite of *Scolytus*, is a *Cenocelius*.

The genus *Opius* is of Wesmael's creation; he described 40 species, including Haliday's *Ademon*, which the latter writer, following Nees v. Esenbeck, considered as a section of *Rhogas*; but, from the absence of the oral aperture proper to a Cyclostome, it is better placed in its present position. The only other writer who has much elucidated the groups is Haliday, whose monograph extends to 49 British species; one of these constitutes his genus *Gnamptodon*, and, of the rest, 22 were unknown to Wesmael. Ten species were previously

known to Nees v. Esenbeck, and arranged by him in the genus *Bracon*, Sectio III. (Mon., i., pp. 52—60). Six of these have been recognised and extracted by Wesmael and Haliday. *Bracon singulator*, Nees, and *Opius singularis*, Wesm., are two different insects with names too much alike. Of the species mentioned or described by Ratzeburg, *Opius rubriceps* belongs to the genus *Cenocoelius*; and *O. ventricosus*, occurring only in the index, is a misprint for *Ophion*. In Förster's Synopsis (Verh. d. pr. Rheinl., 1862) no less than 25 genera are proposed for the *Opiides*. Eight of them are founded upon undescribed insects, and must be rejected as mere names. The remaining 17 have not been of so much use to me as I expected; they depend each upon some trifling character peculiar to one species, and I found it impossible to maintain them as genera. The following names have therefore been here reunited to the genus *Opius* or to *Biosteres*: *Chilotrichia*, *Rhabdospilus*, *Holconotus*, *Allotypus*, *Therobolus*, *Hypocynodus*, *Hypolabis*, *Biophthora*, *Desmiostoma*, *Nosopæa*, and *Utetes*. On the other hand, I have retained *Biosteres* and *Diachasma*, which represent the leading sections of Haliday and Wesmael; each contains a group of similar species, and so far fulfils one of the most essential functions of a genus. Of the seven genera here adopted, the four first consist, unfortunately, of a single species each; yet they seem too aberrant to be included under *Opius*.

Since the year 1836, when Haliday wrote in the 4th vol. of the 'Entomological Magazine,' no notice has been taken of the Opiids in this country, and hardly any mention of them occurs in continental publications; they remain up to the present time among the most neglected of all hymenopterous tribes. In this attempt to reintroduce them to notice I have been unable to obtain any assistance from others, and hence the amount of new matter to be brought forward is necessarily small. Haliday's paper on *Opius* does not profess to be complete; the reader is throughout referred to Wesmael for detailed descriptions; and this, together with extreme conciseness, makes his work laborious to consult. I have endeavoured to remedy this by presenting the whole subject at one view, explained and arranged in a uniform manner, and I have added a few figures of unpublished forms in illustration of each genus.

These insects cannot be identified successfully without some attention to the preparation of the specimens. The principal characters will always have to be taken from the upper side, and with this object in view the specimen must by no means be pinned, which renders the display of the wings and legs almost impossible, besides destroying the thorax,—but it must be neatly set out on a card. It is necessary also in every case to inspect the clypeus and the fovea or furrow of the pleuræ, situated immediately above the middle coxæ, and this becomes impossible when the insect is fastened down flat. It will not do to provide against one of these difficulties and neglect the other; both must be overcome, or the result will almost certainly be disappointment. The question then arises how two requirements, apparently inconsistent with each other, can be fulfilled with the least amount of trouble. One obvious mode of proceeding is that which I have adopted for about two years, *viz.*, never to set a freshly taken *Opius* without first inspecting, and writing down, the two characters taken from the clypeus and the pleuræ. By this method not a moment of time is wasted, future certainty is provided for, and the proper preservation of the specimen is insured. If this preliminary examination be neglected, it is still possible so to set a specimen that it may be removed from the card at pleasure, not without trouble, but with very trifling trouble. Dr. Capron has explained, in the 'Entomologist,' how this may be effected, and it is not necessary to repeat his remarks here. A dried *Opius*, perfectly well-set, may be fixed on its card with an almost invisibly small drop of gum under the thorax, or better still, under the abdomen, leaving the antennæ, wings, and legs quite free. A wet camel-hair pencil dissolves this gum in a moment, and the specimen may then be examined in any position, and afterwards returned to its card.

## TABLE OF GENERA.

- |     |    |  |            |
|-----|----|--|------------|
| (2) | 1. | Occiput acutely margined; body scabrous, not shining; radial areolet incompletely closed .. .. .   | i. ADEMON. |
| (1) | 2. | Occiput not margined; general surface of the body shining, with only a few portions rugose; radial areolet closed (except in <i>Dichasma caffer</i> ). |            |

- (4) 3. Second abdominal segment impressed with two curved, transverse, punctate lines .. .. ii. GNAMPTODON.
- (3) 4. Second abdominal segment with no impressed lines.
- (6) 5. Second abscissa of the radius shorter than the 1st intercubital nervure .. .. iii. HEDYLUS.
- (5) 6. Second abscissa of the radius equal to, or longer than, the 1st intercubital nervure.
- (10) 7. Second abscissa of the radius longer than the 1st intercubital nervure.
- (9) 8. Radius springing from the extreme base of the stigma .. .. iv. EURYTENES.
- (8) 9. Radius springing from any other point of the stigma .. .. v. OPIUS.
- (7) 10. Second abscissa of the radius equal to the 1st intercubital nervure.
- (12) 11. Stigma of the usual form, short, ovate or subtriangular, never emitting the radius from a point before the middle (except *D. rugosa*) .. .. vii. DIACHASMA.
- (11) 12. Stigma elongate, narrow, emitting the radius from the middle or from a point before it .. .. vi. BIOSTERES.

i. ADEMON, *Haliday*.

Hal., Ent. Mag., i., 266.

Clypeus reaching the mandibles, and closing the mouth; cheeks defined by a cariniform line; occiput acutely margined; maxillary palpi 6-, labial 4-jointed. Body subscabrous or coriaceous, not shining. Prothorax distinct, deeply and transversely striated. Mesothoracic sutures effaced; the middle lobe canaliculated, and margined on either side by a raised line, which is highest in front. Mesopleuræ with a rugose furrow. Metathorax short, truncate, coarsely and irregularly reticulated. Wings much longer than the body, narrow; stigma wedge-shaped, attenuated, emitting the radius beyond the middle; recurrent nervure interstitial; 2d abscissa of the radius as long as the 1st intercubital nervure; radius and cubitus effaced after passing the 2d cubital areolet; pobrachial areolet somewhat longer than the præbrachial; hind wings very narrow, their pobrachial areolet as long as  $\frac{1}{3}$  of the præbrachial; no anal nervure. Legs elongate, slender; femora and apex of the tibiæ subincrassated; claws elongate. Abdomen sessile, depressed, scabrous, dull, with distinct sutures; the segments in the ♀ widening from the base to about the end of the 2d, which is as long as the 1st; 3d scarcely a quarter as long as the 2d; the rest very short, annuliform, tapering to the extremity. Terebra concealed. In the ♂ the sculpture is less rough, the

abdomen longer, more depressed, the posterior segments more broadly visible, and the claws shorter.

1. *Ademon decrescens*, Nees. (Pl. II., fig. 1, ♀).

*Rogas decrescens*, Nees, Mon., i., 220; *A. decrescens*, Hal., Ent. Mag., iv., 104; *Opius decrescens*, Wesm., Nouv. Mém. Ac. Brux., 1838, p. 148, ♂ ♀.

Resembles a small *Rhogas*. Variable; usually black; mandibles, palpi, and legs rufo-piceous. Antennæ shorter than the body, 21—27-jointed; basal joints of the flagellum elongate, the others rapidly decreasing in length to the apex; last joint not longer than the penultimate; 3d joint equal to the 4 apical joints taken together. Scutellum preceded by a cancellated fovea. Wings variable (see *infra*); radix and squamula rufous, with a dark spot. Abdomen ♀ oblong-ovate, subconvex; segments 1, 2 equal in length, widened behind, densely punctulate or scabrous; suturiform articulation curved, deeply impressed; 3d segment punctulate, with the hinder margin smooth, forming a transverse carina; apical segments also smooth, or only the base of the 4th punctulate; posterior margin of all the segments ciliated. ♂ ♀. Length, 1—1 $\frac{3}{4}$ ; wings, 2 $\frac{1}{2}$ —3 $\frac{1}{2}$  lines.

Haliday arranges the principal varieties in two sections:—

I. Wings infumated; stigma and nervures fuscous; body black, abdomen sometimes piceous behind. ♂ ♀.

Var. 1. Legs blackish, trochanters pale brown or yellow, base of tibiæ and tarsi sometimes pale.

Var. 2. Coxæ, femora, and base of tibiæ dull rufous; or legs rufous, with the tibiæ and tips of the tarsi dark.

Var. 3. Sides of prothorax rufous; the rest as in Var. 1.

II. Wings yellowish, clouded with fuscous at the base and apex; stigma yellow; nervures becoming paler towards the extremity. Females only.

Var. 4. Black; prothorax rufous; posterior margin of segments 3—4, and following segments entirely, piceous. Legs blackish, with yellow trochanters; base of the tibiæ and almost the whole of the tarsi, ferruginous.

Var. 5. Black; thorax in front, and abdomen after the 3d segment, rufous. Femora blackish brown; tibiæ brown; coxæ and greater part of the tarsi ferruginous; apex of femora and base of

tibiæ yellow. Sometimes a rufous patch on the occiput, and another beneath the antennæ.

Var. 6. Rufous; vertex, metathorax, and 1st abdominal segment, black; antennæ black; legs fuscous; coxæ, apex of femora, base of tibiæ and of tarsi, flavo-testaceous; trochanters yellow. Sometimes the metathorax and 1st segment are infuscated only in the middle, or the abdomen and legs are more flavo-testaceous; the extreme base of the 4 posterior femora, with the apex of their tibiæ and tarsi, fuscous.

Rare and local in England; Walker's collection contained only a single specimen; taken by Haliday much more frequently in the Hebrides and in Ireland, where he found it almost gregarious on aquatic plants by the sides of rivers. I have seen no specimens except my own, which were taken formerly by sweeping *Nasturtium officinale* in a ditch near Aylestone, in Leicestershire; at that place the insects were not uncommon, but no varieties occurred among them. Nees v. Esenbeck found his specimen on water-cress near Sickershausen, and received others from Bohemia and Italy. He has described a second species as *Rogas mutuator*, distinguished chiefly by the smoothness of the 3d abdominal segment; of this I captured a specimen in Corsica.

## ii. GNAMPTODON, Haliday.

*Gnamptodon*, Hal., Ent. Mag., i., 265 (1833).

*Diraphus*, Wesm., Nouv. Mém. Ac. Brux., 1838, p. 89.

Head transverse; clypeus separated from the mandibles by a narrow space in the form of a crescent; labial palpi 3-jointed. Mesothoracic sutures deep, impunctate, effaced posteriorly. Mesopleuræ smooth, without a furrow. Stigma ovate, lanceolate, emitting the radius a little before the middle; radial areolet oblong, lanceolate, ending not far from the tip of the wing; 2d abscissa of the radius almost as short as the 1st, making the 2d cubital areolet very narrow, trapeziform, and smaller than the 1st, which receives the recurrent nervure near its apex; pabrachial areolet longer than the præbrachial; anal nervure not interstitial. Abdomen sessile, ovate; 1st segment obconic, striolate, bicarinate; 2d impressed near the base with an arcuate, punctate, transverse line across the disk, and another near the apex; the concave side of both impressions is towards the thorax; 3d suture superficial like the 2d, not diarthrodial, a character peculiar to this genus. Terebra very short, subulate, deflexed.

Nees v. Esenbeck described the single species of this genus as a *Bracon*, and Wesmael founded for it a new genus *Diraphus*, which he included among the *Cyclostomi*; the oral aperture, however (if it can be so called), is very different from that of the Braconoid genera, being merely a transverse slit caused by the clypeus not touching the mandibles, a structure characteristic of many Opiids, in accordance with which Haliday referred his genus *Gnamptodon* to its present place.

1. *Gnamptodon pumilio*, Nees. (Pl. II., fig. 2, ♀).

*Bracon pumilio*, Nees, Mon., i., 90, ♂ ♀.

*G. pumilio*, Hal., Ent. Mag., iv., 220, ♂ ♀; fig. d (wing).

*Diraphus pygmæus*, Wesm., Nouv. Mém. Ac. Brux., 1838, p. 90, ♂; pl. fig. F (abdomen).

Black, shining; belly testaceous; oral parts, 4 or 5 basal joints of antennæ, and legs, yellow; claws fuscous. Head minutely punctulate; middle of the face smooth. Antennæ about as long as the body, filiform, 19—23-jointed. Wings hyaline, squamula and nervures yellow, the latter very pale, mostly subobsolete; stigma fusco-testaceous; podiscoidal areolet open at the extremity. ♂ ♀. Length,  $\frac{3}{4}$ —1; wings,  $1\frac{3}{4}$ — $2\frac{1}{4}$  lines.

Not common; taken by Nees in Franconia; by Haliday in the Hebrides and Ireland, on leaves of *Betula alba*; by Wesmael in Belgium; found sparingly in England; I have seen specimens in Fitch's and Bignell's collections, and possess one myself, from which the figure is taken. Ratzeburg (Ichn. d. Forst., iii., 176) notices a *Bracon* bred from *Stigmonota dorsana*, F., which he refers conjecturally to Wesmael's *Diraphus*; but this gives no certain information for the terebra of this insect was half as long as the abdomen; Ratzeburg compares it to *Bracon titubans*, Wesm.; it was not, however, a genuine *Bracon*.

### iii. HEDYLUS, n. g.

Statura gracilis, antennis pedibusque elongatis. Clypeus apice elevatus; genæ dilatæ; palpi maxillares longissimi, labiales 4-articuli. Mesothoracis sulculi distincti. Mesopleuræ sulco crenato. Stigma fere ovale, radium ultra medium emittens; areola cubitalis 2da parva, transversa, latere externo obsolete, angulo



interno fortiter producto; radii abscissa 2da nervo 1mo intercubitali brevior, abscissa 1ma perpaulo longior; nervus recurrens interstitialis; areola podiscoidalis non perfecte oclusa; nervus cubitalis pone areolam cubitalem 2dam deletus. Alarum inferiorum areola pobrachialis præbrachiali plus quam dimidio brevior; nervus analis nullus. Abdomen subpetiolatum, sulcis transversis nullis; suturæ præter primam obsoletæ; segmentum 1um elongatum fere lineare. Femina latet.

Form slender, with elongate antennæ and legs. Clypeus raised at the apex; cheeks dilated; maxillary palpi very long, labial 4-jointed. Mesothoracic sutures distinct. Mesopleuræ with a crenate furrow. Stigma subovate, emitting the radius beyond the middle; 2d cubital areolet small, transverse, its outer side obsolete, its inner angle much produced; 2d abscissa of the radius shorter than the 1st intercubital nervure, and very little longer than the 1st abscissa; recurrent nervure interstitial; podiscoidal areolet incompletely closed; cubital nervure effaced after passing the 2d cubital areolet. Pobrachial areolet of the hind wings less than half as long as the præbrachial; anal nervure none. Abdomen subpetiolated, without transverse impressions; all the sutures after the 1st indistinct; 1st segment elongate, sublinear. Female not known.

The unique insect here indicated is a true Opiid from the structure of the mouth, though otherwise much like an *Alysia*. The mandibles fit closely at the points; the clypeus does not touch them in the middle, its lower edge being raised so as to leave a small opening. Head subcubic, buccate, widest behind, and broader than the thorax; occiput concave, not margined; face subcarinated; maxillary palpi remarkably long, reaching to the hind coxæ. Middle lobe of the mesothorax truncate anteriorly; mesothoracic sutures impunctate, almost effaced posteriorly; a punctiform fovea before the scutellum. Abdomen as long as the head and thorax, gradually widened to the truncated anus, and depressed, appearing biarticulate from the extreme tenuity of the sutures; 1st segment rimulose, the rest smooth and shining. The 2d cubital areolet is not longer than that of *Gnamptodon*, but shorter, transverse, less contracted at the tip, and much more acutely produced inwards; the prædiscoidal areolet is subsessile; the straight radius reaches the top of the wing. With this may perhaps be compared Förster's undescribed genus *Mesotages*, in Verh. pr. Rheinl., 1862, p. 258.

1. *Hedylus habilis*, n. sp. (Pl. II., fig. 3, ♂).

Niger, capite, antennarum basi, prothorace, mesothoracis lateribus, abdominisque medio superne, testaceis. Palpi fere albi. Stemmaticum nigrum; vertex, occiput, piceo-rufa. Scutellum etiam piceum. Alæ hyalinæ, squamula, nervis, stigmatè, pallide fusciscentibus. Pedes flavidi coxis pallidioribus.

Black; head, antennæ broadly at the base, prothorax, sides of the mesothorax partly, and abdomen indeterminately in the middle, testaceous. Palpi very pale, whitish. Stemmaticum black; vertex and occiput piceo-rufous. Scutellum piceous. Wings hyaline, squamula, nervures, and stigma pale, fusciscent. Legs yellowish, with paler coxæ. ♂. Length,  $1\frac{1}{2}$ ; wings,  $3\frac{3}{8}$  lines.

Antennæ slender, setaceous, twice the length of the body, 36-jointed, the 3d joint much longer than the 4th; joints 1—8 testaceous, the rest gradually darkened to the apex. Metathorax short, sloping gradually, irregularly reticulated, with a smooth shining space on either side of the base; the apical margin somewhat acutely raised. Wings much longer than the abdomen; fore wings ample, the nervures distinct, except the cubitus, the 2d intercubital, and the extremity of the anal, which are effaced. Hind wings narrow, ciliated with long pale hairs. First abdominal segment scarcely dilated behind, 3 times longer than its apical breadth, longitudinally convex with depressed lateral margins, rimulose, black, the extreme base testaceous; the rest of the abdomen smooth, shining, blackish, broadly and indeterminately testaceous on the disk.

The only specimen was discovered by Bignell in South Devon.

## iv. EURYTENES, Förster.

Först., Verh. pr. Rheinl., 1862, p. 259.

Distinguished from *Opius* only by its peculiar wings. Face carinated; mouth closed. Mesopleuræ impressed with a crenate furrow. Mesothorax elevated, gibbous, subrugulose, without visible sutures. Metathorax very short, abruptly sloping, contracted behind. Fore wings ample, dilated and obtusely rounded at the extremity; stigma very long and narrow, incrassated towards the apex; radius springing from its *extreme base*; 1st abscissa making a very obtuse angle with the 2d, but not in a line with it (as represented by Wesmael); 3d abscissa straight, reaching the end of the wing, and enclosing a large cultriform radial areolet; 2d cubital areolet larger than the 1st, both trapezoidal; recurrent nervure

interstitial; cubital and anal nervures effaced towards their extremity. Hind wings shorter by a half, narrow, linear. Abdomen almost petiolated; 1st segment short, narrow, linear, rugulose, with distinct tubercles; the following segments form a smooth oval, as broad as the thorax. Terebra hardly exerted.

1. *Eurytenes abnormis*, Wesm. (Pl. II., fig. 4, wing).

*Opius abnormis*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 117, pl. ii., fig. 5 (wing); Hal., Ent. Mag., iv., 204, fig. c (wing, more correctly drawn); Ratz., Ichn. d. Forst., ii., 62, ♂ ♀.

Black; abdomen dull testaceous or piceous; darker at the apex in the ♂. Antennæ (broken in my specimen) filiform, longer than the body; 1st joint, tip of the 2d, and base of the 3d, testaceous. Mandibles, palpi, and margin of the clypeus, pale testaceous. Metathorax rugulose, except on each side of the base. Wings hyaline, squamula, stigma, and nervures brownish. Legs testaceous; tips of the hind femora, most part of their tibiæ, and their tarsi, infuscated. ♂ ♀. Length, 1—1½; wings, 2½—3 lines.

A single pair were discovered by Wesmael near Brussels; a ♀ in North Ireland by Haliday; a ♂ at Windsor by Walker; and a ♀ of unknown origin is in my collection. Ratzeburg (*l.c.*) briefly mentions an *Opius paradoxus*, bred by Bouché from the maggot of *Pegomyia bicolor*, Wied., which had the wings of *Eurytenes*, except that the 2d and 3d cubital areolets were not separated. The 2d intercubital nervure is subobsolete in nearly all the Opiids, and I presume Ratzeburg's insect was the present species.

v. OPIUS, *Wesmael*.

Wesm., Nouv. Mém. Ac. Brux., 1835, p. 115; Hal., Ent. Mag., iv., 203.

Radial areolet closed; radius never springing from the base of the stigma; its 2d abscissa longer, often much longer, than the 1st intercubital nervure; stigma elongate, narrow. The other characters are those of the subfamily (see *ante*).

The preceding genera given in the table cannot be confounded with *Opius*; of the two remaining genera, *Diachasma* is at once recognised by the short oval stigma, and *Biosteres* by the 2d cubital areolet, which is not

horizontally elongate, the upper side being never longer than the inner side. *Diachasma* and *Biosteres* agree in the form of the 2d cubital areolet, but differ in the stigma, which in *Biosteres* is elongate, like that of *Opius*. No other structural differences of importance appear to exist, and perhaps the separation of *Diachasma* and *Biosteres* from *Opius* is a needless refinement.

Of the 40 species about to be described in this genus, *ochrogaster*, *ruficeps*, and *testaceus*, Wesm., were unknown to Haliday; *compar* and *zelotes* are new species. Not being possessed of all the species, I have been unable to complete several of the existing descriptions, in which important characters are sometimes omitted.

#### TABLE OF SPECIES.

- |      |  |                              |
|------|--|------------------------------|
| (42) | 1. Furrow of the mesopleuræ smooth, impunctate, or obsolete.   |                              |
| (41) | 2. Recurrent nervure everted; seldom interstitial or subinterstitial.  |                              |
| (20) | 3. Mesothorax without a punctiform impression before the scutellum.  |                              |
| (17) | 4. Clypeus not reaching the mandibles; mouth open.   |                              |
| (6)  | 5. First abdominal segment smooth, without sculpture .. .. .   | 1. <i>lugens</i> , Hal.      |
| (5)  | 6. First abdominal segment more or less rimulose or rugulose.  |                              |
| (8)  | 7. Antennæ 19-jointed .. .. .  | 2. <i>pendulus</i> , Hal.    |
| (7)  | 8. Antennæ with more than 19 joints.   |                              |
| (12) | 9. Antennæ 21—28-jointed.  |                              |
| (11) | 10. Antennæ 21—23-jointed, not longer than the body, even in the ♂; terebra ♀ equal to one-half or two-thirds of the abdomen; legs stout .. .. . | 3. <i>pygmæator</i> , Nees.  |
| (10) | 11. Antennæ 27—28-jointed, longer than the body, in the ♂; terebra ♀ hardly as long as the last segment of the abdomen; legs slender .. .. .     | 4. <i>apiculator</i> , Nees. |
| (9)  | 12. Antennæ 31—34-jointed.   |                              |
| (14) | 13. Legs rufous .. .. .  | 5. <i>clarus</i> , Hal.      |
| (13) | 14. Legs flavo-testaceous.   |                              |
| (16) | 15. Antennæ broadly testaceous at the base   | 6. <i>victus</i> , Hal.      |
| (15) | 16. Antennæ with only the scape pale ..  | 7. <i>spretus</i> , Hal.     |
| (4)  | 17. Clypeus reaching the mandibles and closing the mouth.  |                              |
| (19) | 18. Upper side of the 2d cubital areolet distinctly longer than the inner side; antennæ 30-jointed .. .. .                                       | 8. <i>tacitus</i> , Hal.     |

- (18) 19. Upper side of the 2d cubital areolet hardly longer than the inner side; antennæ 26-jointed .. .. 9. *exilis*, Hal.
- (3) 20. Mesothorax with a punctiform impression just before the scutellum.
- (24) 21. Clypeus reaching the mandibles and closing the mouth.
- (23) 22. Apex of the abdomen black or piceous; antennæ 25—30-jointed .. .. 10. *pallidipes*, Wesm.
- (22) 23. Apex of the abdomen rufous; antennæ 41—42-jointed .. .. 11. *analis*, Wesm.
- (21) 24. Clypeus not reaching the mandibles; mouth open.
- (34) 25. Abdomen entirely black or dark piceous.
- (27) 26. Second abscissa of the radius hardly longer than the 1st intercubital nervure; (antennæ 37-jointed) .. .. 12. *vindex*, Hal.
- (26) 27. Second abscissa of the radius distinctly longer than the 1st intercubital nervure.
- (29) 28. Second cubital areolet not narrowed outwards, the upper and lower sides being parallel .. .. 13. *cellus*, Hal.
- (28) 29. Second cubital areolet narrowed outwards, the upper and lower sides not parallel.
- (31) 30. Mesothoracic sutures complete, though shallow; legs of the ♀ very stout; antennæ ♀ 27-jointed .. .. 14. *crassipes*, Wesm.
- (30) 31. Mesothoracic sutures effaced; legs of ordinary thickness in both sexes.
- (33) 32. Recurrent nervure interstitial; antennæ 29—34-jointed .. .. 15. *sævus*, Hal.
- (32) 33. Recurrent nervure everted; antennæ 20—24-jointed .. .. 16. *instabilis*, Wesm.
- (25) 34. Abdomen entirely or in great part testaceous; the 1st segment black.
- (36) 35. Radial areolet ending acutely on the fore border of the wing, much before the extremity .. .. 17. *ochrogaster*, Wesm.
- (35) 36. Radial areolet cultriform, ending at or near the extremity of the wing.
- (38) 37. Mesothoracic sutures faintly but completely traced; head of the ♀ red .. .. 18. *compar*, n. sp.
- (37) 38. Mesothoracic sutures obsolete; head black in both sexes.
- (40) 39. Abdomen (after the 1st segment) wholly testaceous in the ♀, black at the apex in the ♂; tips of hind tibiæ always fuscous .. .. 19. *maculipes*, Wesm.

- (39) 40. Abdomen (after the 1st segment) testaceous, with a fuscous band on each segment, in both sexes; hind tibiae wholly testaceous .. .. 20. *cingulatus*, Wesm.
- (2) 41. Recurrent nervure rejected .. .. 21. *irregularis*, Wesm.
- (1) 42. Furrow of the mesopleuræ crenate or rugose.
- (72) 43. Recurrent nervure everted.
- (47) 44. Clypeus reaching the mandibles; mouth closed.
- (46) 45. Abdomen (after the 1st segment) rufo-testaceous; metathorax rugulose; length  $1\frac{1}{4}$  l. .. .. 22. *leptostigmus*, Wesm.
- (45) 46. Abdomen entirely black or piceous; metathorax smooth; length  $\frac{3}{4}$  l. .. 23. *parvulus*, Wesm.
- (44) 47. Clypeus not reaching the mandibles; mouth open.
- (49) 48. Mesothoracic sutures effaced .. 24. *docilis*, Hal.
- (48) 49. Mesothoracic sutures inchoate or complete.
- (61) 50. Mesothoracic sutures inchoate, effaced posteriorly.
- (60) 51. Abdomen wholly black or piceous, except sometimes the base of the 2d segment, which is more or less rufo-testaceous.
- (53) 52. Radial areolet ending acutely on the fore border of the wing, much before the extremity .. .. 25. *nitidulator*, Nees.
- (52) 53. Radial areolet cultriform, ending at or near the extremity of the wing.
- (55) 54. Antennæ ♂ only 21-jointed; legs dark coloured .. .. 26. *æthiops*, Hal.
- (54) 55. Antennæ with more than 21 joints; legs rufo- or flavo-testaceous.
- (57) 56. Legs rufo-testaceous .. .. 27. *pactus*, Hal.
- (56) 57. Legs flavo-testaceous.
- (59) 58. Length 1 line; (antennæ ♀ 27-jointed) 28. *æmulus*, Hal.
- (58) 59. Length  $1\frac{1}{2}$  line; (antennæ ♂ 37—38-jointed) .. .. 29. *zelotes*, n. sp.
- (51) 60. Abdomen (after the 1st segment) testaceous, the hind borders of the segments fuscous .. .. 30. *polyzonius*, Wesm.
- (50) 61. Mesothoracic sutures complete.
- (63) 62. Head rufous .. .. 31. *ruficeps*, Wesm.
- (62) 63. Head black.
- (65) 64. Scutellum rugulose .. .. 32. *bajulus*, Hal.
- (64) 65. Scutellum smooth.
- (67) 66. Humeral angles of the mesothorax truncated .. .. 33. *truncatus*, Wesm.
- (66) 67. Humeral angles of the mesothorax rounded as usual.

- (69) 68. Face and mesothorax scabrous, dull .. 34. *rudis*, Wesm.  
 (68) 69. Face and mesothorax smooth, more or less shining.  
 (71) 70. Second abdominal segment scabrous, dull .. .. . 35. *cæsus*, Hal.  
 (70) 71. Second abdominal segment smooth, shining .. .. . 36. *reconditor*, Wesm.  
 (43) 72. Recurrent nervure rejected; rarely interstitial.  
 (74) 73. Face and thorax rugulose .. .. 37. *cætatus*, Hal.  
 (73) 74. Face and thorax smooth.  
 (76) 75. Head, thorax, and abdomen testaceous; terebra as long as the abdomen .. 38. *testaceus*, Wesm.  
 (75) 76. Head, thorax, and abdomen black, sometimes with a few rufous marks; terebra subexserted.  
 (78) 77. Orbits black; antennæ 36—42-jointed; 1st abdominal segment short, broad; 2d without a transverse channel .. 39. *rufipes*, Wesm.  
 (77) 78. Orbits rufous; antennæ 21—31-jointed; 1st abdominal segment long, narrow; 2d impressed with a faint transverse channel .. .. . 40. *comatus*, Wesm.

### 1. *Opius lugens*, Hal.

*Opius lugens*, Hal., Ent. Mag., iv., 206, ♀.

Black, very shining. Clypeus not touching the mandibles. Antennæ as long as the body, 21—23-jointed. Palpi fusco-testaceous. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax quite smooth. Wings hyaline, stigma and nervures fuscous; radial areolet ending before the extremity of the wing; recurrent nervure everted; hind wings with a vestige of the pobrachial transverse nervure. Legs fusco-testaceous; coxæ black; base of fore femora, 4 posterior femora almost entirely, hind tibiæ, and tips of all the tarsi, fuscous. Abdomen suborbicular; 1st segment slender, narrowly obovate, entirely smooth. Male unknown. Length,  $\frac{3}{4}$  line.

According to Haliday, distinguished from *apiculator* (sp. 4) by the somewhat broader stigma and shorter 2d cubital areolet, attenuated towards the apex. Unknown to me, but indicated as occurring rarely in England, Ireland, and the Hebrides.

2. *Opius pendulus*, Hal.

*O. pendulus*, Hal., Ent. Mag., iv., 205, ♂ ♀.

Black; clypeus brown, not touching the mandibles; palpi very long, testaceous, fuscous at the base. Mandibles testaceous, dilated and emarginate at the base beneath. Antennæ shorter than the body, 19-jointed. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax shining, almost smooth. Wings hyaline, squamula piceous, stigma and nervures fuscous; recurrent nervure everted; 1st abscissa of the radius longer than in *pygmæator* (sp. 3), not punctiform; radial areolet smaller; 2d cubital areolet longer; hind wings broader. Legs fusco-testaceous, with black coxæ; base of tibiæ, and a lateral streak on the femora, paler; tarsi fuscous. First abdominal segment rimulose, somewhat shining. Terebra as long as one-fourth of the abdomen. Length, 1 line.

Unknown to me. Found by Haliday very rarely in North Ireland; Walker took both sexes in the London district.

3. *Opius pygmæator*, Nees.

*Bracon pygmæator*, Nees, Mon., i., 52; *O. pygmæator*, Hal., Ent. Mag., iv., 205, ♂ ♀.

*O. funebris*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 124, ♂ ♀.

Black, shining. Face faintly carinated; clypeus not quite touching the mandibles, separated from the face by a semicircular line ending on either side in a punctiform impression, black with the apex pale, seldom entirely black; mandibles testaceous, broadly dilated and almost always sinuated at the base; palpi blackish. Antennæ black, as long as the body, filiform, 21—23-jointed. Thorax smooth and shining; sutures of the mesothorax effaced. No punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Wings dull hyaline; nervures brownish; stigma testaceous, elongate, narrow, attenuated at both ends, emitting the radius at one-fourth of its length from the base; 1st abscissa punctiform; 2d not quite twice as long as the 1st intercubital nervure, which is twice as long as the 2d intercubital nervure; this last is colourless and subobsolete; radial areolet almost reaching the tip of the wing; recurrent nervure everted. Legs stouter than in *apiculator* (sp. 4), pale piceous, coxæ black, 1st joint of the trochanters obscure; femora dusky on



their upper edge, the 4 posterior often almost entirely dark; tibiæ more or less dusky towards the apex; tarsi dark, with the ends of the articulations paler. Abdomen ♀ depressed, ovate; of the ♂, narrower; 1st segment obconic, with a basal fovea, the lateral edges of which are cariniform; generally somewhat rugulose in the middle and posteriorly. Terebra as long as  $\frac{1}{2}$  or  $\frac{2}{3}$  of the abdomen. ♂ ♀. Length, 1; wings, 2 lines.

Common. Wesmael described *O. funebris* from 14 females and 3 males taken near Brussels. He expresses a doubt whether it is the *pygmæator* of Nees, but the reasons for this uncertainty are very trivial, and Haliday has not hesitated to unite the two. Another difficulty seems to be the colour of the stigma, described as dark (*noirâtre*) by Wesmael, while, according to Nees, and in all the English specimens, it is very pale fuscous, or testaceous. The ♀ is remarkable in this genus for the length of the terebra; the ♂ can only be distinguished from that of *apiculator* by its stouter legs and shorter antennæ.

#### 4. *Opius apiculator*, Nees.

*Bracon apiculator*, Nees, Mon., i., 56; *O. apiculator*, Hal., Ent. Mag., iv., 206, ♂ ♀.

Black; mouth and palpi testaceous. Clypeus not touching the mandibles. Antennæ slender, filiform, as long as the body in the ♀, longer in the ♂, 27—28-jointed, black, the 3 first joints often more or less rufous. Mesothoracic sutures obsolete. No punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax almost smooth. Wings ample, much longer than the body, hyaline; nervures fuscous; stigma narrow, elongate, piceo-testaceous, emitting the radius at about  $\frac{1}{4}$  of its length; 1st abscissa short but distinct; 2d one-half longer than the 1st intercubital nervure; 3d somewhat curved, reaching the margin of the wing very near its extremity; recurrent nervure everted. Legs rufo-testaceous; base of hind coxæ and apex of their tibiæ fuscous. Abdomen ovate; 1st segment rimulose, black, somewhat piceous at the sides; 2d with two oblique impressions indicating the gastrocæli. Terebra hardly as long as the last segment. ♂ ♀. Length,  $\frac{3}{4}$ ; wings, 2 lines.

Var. 1. Base of the 2d abdominal segment pale.

Var. 2. Hind coxæ and femora fuscous above.

Var. 3. Scape of antennæ, and legs entirely, testaceous. Haliday.

Generally distributed, and common in woods, both in England and Ireland. *O. levis* and *exiguus*, Wesm., were supposed by Haliday to be identical with this species; they have, however, the 1st abdominal segment smooth, not rimulose, and in that respect resemble rather *O. lugens*, Hal. (sp. 1). I am not able, from the want of specimens, to clear up the doubts attending these little-known insects. *O. apiculator*, Nees, differs from *lugens*, Hal., in having the 1st segment finely rimulose, though still rather shining.

#### 5. *Opius clarus*, Hal.

*O. clarus*, Hal., Ent. Mag., iv., 206, ♀.

Black; base of 2d abdominal segment rufous. Clypeus and mandibles rufous, the latter emarginate beneath at the base, and not touching the clypeus. Antennæ 34-jointed, longer than the body; scape rufous. Mesothoracic sutures obsolete. No punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax smooth in the middle, rugulose on the sides. Furrow of the mesopleuræ impunctate. Wings hyaline; squamula rufous; nervures fuscous; stigma paler fuscous, narrow, linear, lanceolate, emitting the radius before  $\frac{1}{3}$  of its length; radial areolet nearly reaching the extremity of the wing; 2d cubital areolet very little narrowed outwards; recurrent nervure everted. Hind wings with a vestige of the pobrachial transverse nervure. Legs rufous; fore coxæ testaceous. First abdominal segment oblong, rugulose; 2d segment rufous, determinately black at the apex; the following segments black. Terebra subexserted. Male unknown. Length, 1 line.

I have not met with any *Opius* which can be referred with certainty to this species, which is not sufficiently distinguished from *spretus* (sp. 7); in fact, no distinctive character is pointed out except the uncertain difference between rufous and flavo-testaceous. The locality also is omitted.

#### 6. *Opius victus*, Hal.

*O. victus*, Hal., Ent. Mag., iv., 207, ♀.

Black; mandibles and clypeus testaceous; clypeus not reaching the mandibles; palpi elongate, very pale; face obsoletely carinated. Antennæ one-half longer than the body, 31—34-jointed, fuscous, broadly testaceous at the base. No punctiform impression before

the scutellum. Mesopleuræ with an impunctate furrow. Metathorax punctate-rugulose, somewhat shining. Wings elongate, hyaline; squamula testaceous; nervures and stigma fuscous, the latter very narrow, linear, emitting the radius near its base; radial areolet reaching the extremity of the wing; 2d cubital areolet elongate, not at all attenuated outwards, equal in length to the 3d; recurrent nervure everted; podiscoidal areolet closed. Pobrachial transverse nervure of the hind wings inchoate. Legs flavo-testaceous; hind tibiæ fuscous at the apex, their tarsi fuscous, the articulations annulated with paler colour. First abdominal segment punctate-rugulose, black, somewhat shining, sublinear; 2d fusco-testaceous, with a fovea on each side at the base. Terebra exerted, very short. Male unknown. Length,  $\frac{3}{4}$ —1 line.

This species is compared to  *analis*, Wesm. (sp. 11), but differs in having no punctiform impression before the scutellum, the clypeus does not reach the mandibles, the radius originates nearer to the base of the stigma, the 1st abscissa is shorter, and the 2d cubital areolet much longer. Unknown to me; taken by Haliday very rarely, in autumn, on the banks of the Shannon.

### 7. *Opius spretus*, Hal.

*O. spretus*, Hal., Ent. Mag., iv., 207, ♂ ♀.

Black; base of the 2d abdominal segment testaceous. Form, sculpture, and neuration of wings the same as in *O. clarus* (sp. 5), only the colours somewhat different. Clypeus and mandibles testaceous; clypeus not reaching the mandibles; palpi more yellowish. Antennæ 31—34-jointed, the scape testaceous. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Furrow of the mesopleuræ impunctate. Legs flavo-testaceous; apex of hind tibiæ obscure, as well as their tarsi. Second abdominal segment dull testaceous at the base, with an obsolete fovea on each side; fuscous at the apex; belly pale. Terebra subexserted. ♂ ♀. Length, 1 line.

Taken by Haliday in North Ireland at the beginning of October, also on the banks of the Shannon; Walker found the ♂ in England. The only difference between this and *O. clarus* (sp. 5) seems to consist in the colour of the legs, palpi, &c., which in the former species are flavo-testaceous, and in the latter rufous. I have two females taken respectively at Nunton, Wilts, and Bishop's Teignton, Devon, the legs of which are more yellow than

red, and hence I am inclined to refer them to the present species, rather than to *O. clarus*.

### 3. *Opius tacitus*, Hal.

*O. tacitus*, Hal., Ent. Mag., iv., 207, ♂.

Black; base of the 2d abdominal segment rufous. Face subcarinated; clypeus reaching the mandibles; both testaceous. Antennæ about one-half longer than the body, 30-jointed, broadly rufo-testaceous towards the base. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Furrow of the mesopleuræ impunctate. Metathorax rugulose. Wings hyaline; squamula testaceous; nervures fuscous; stigma fusco-testaceous, linear-lanceolate; 2d cubital areolet attenuated outwards; recurrent nervure everted. Pobrachial transverse nervure of the hind wings inchoate. Legs testaceous. First abdominal segment rugulose. Length, 1 line.

? Var. 1, ♀. Smaller; base of antennæ fuscous, only the scape testaceous. Stigma narrower. Legs very pale testaceous. Second abdominal segment fuscous; terebra briefly exerted. Length,  $\frac{3}{4}$  line.

Originally mixed up by Haliday with *victus* or *spretus* (spp. 6, 7); from the latter it differs in having the joints of the antennæ longer, and the 2d cubital areolet shorter. Compare *Bracon circulator* and *orbulator*, Nees, Mon., i., 54, 55, the descriptions of which apply equally to several species of *Opius*. I have not seen *O. tacitus*, which, according to Haliday, is very rare in North Ireland; a single specimen was taken by Walker in the London district.

### 9. *Opius exilis*, Hal.

*O. exilis*, Hal., Ent. Mag., iv., 208, ♀.

Similar to *O. tacitus* (sp. 8) and *O. parvulus* (sp. 23). Black; 2d abdominal segment rufo-piceous. Mouth testaceous; clypeus reaching the mandibles. Antennæ hardly longer than the body, 26-jointed; scape testaceous. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax shining only in the middle of the base. Second cubital areolet short, attenuated outwards, its upper side scarcely longer than the inner; recurrent nervure everted. Legs testaceous, base of hind coxæ, and apex of all the tarsi, fuscous. Male unknown. Length,  $\frac{3}{4}$  line.

Haliday says no more of this species, which, like several others, can hardly be recognised by the description. It differs from the preceding in having fewer joints in the antennæ, and from *O. parvulus* by the impunctate furrow of the mesopleuræ.

#### 10. *Opius pallidipes*, Wesm.

*O. pallidipes*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 118, ♂ ♀; pl. ii., fig. 6 (wing); Hal., Ent. Mag., iv., 208; Ratz., Ichn. d. Forst., ii., 62, pl. ii., fig. 31 (wing).

Black; mouth testaceous; 2d or 3d abdominal segment sometimes rufo-piceous. Face with a distinct shining carina, which reaches the base of the antennæ. Clypeus straight on its lower edge, touching the mandibles, black with the extremity testaceous; seldom wholly pale. Mandibles testaceous, much dilated at the base, which is often emarginate beneath. Palpi testaceous. Antennæ longer than the body, 25–30-jointed; 1st joint and extremity of the 2d testaceous, the 1st sometimes black beneath; joints 2–4 sometimes rufescent beneath, or the under side of all the joints paler than the upper. Mesothorax smooth and shining, its sutures effaced. A punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax finely rugulose, especially towards the extremity. Wings hyaline; radial areolet almost reaching the extremity; stigma very narrow, elongate, dull testaceous; recurrent nervure everted. Legs testaceous. Abdomen of the ♀ short and broad, more elongate in the ♂; 1st segment short, narrow, its posterior half usually rugulose. Terebra hardly as long as the last segment. Length,  $\frac{3}{4}$ –1 line.

Var. 1. Second abdominal segment partly or wholly dull testaceous. Wesmael compares this var. to *Bracon orbiculator*, Nees, which differs only in having the terebra as long as the two last abdominal segments. Ratzeburg's specimen (*l. c.*) belonged to this var.

Var. 2. Third abdominal segment rufo-piceous.

This species, which I have not met with, forms the genus *Hypolabis*, Förster. Wesmael's description was made from 15 females and 5 males, taken near Brussels from May to September; Walker captured a ♂ in the London district, having the base of the antennæ broadly rufescent. Goureau (Bull. de la Soc. des Sciences hist. et nat. de l'Yonne, 1863, p. 66 of the separate impression)

refers to *O. pallidipes*, Wesm., a parasite which he reared from *Tephritis onopordinis*, Fall.; but the description of the parasite is not technical enough to lead to its verification. The nervures and stigma are described as blackish, and the recurrent nervure as interstitial,—characters not applicable to the present species. We are informed by Ratzeburg (*l. c.*) that Bouché bred *O. pallidipes* from *Tortrix rosana*, L.; while, according to Boie, it was also bred by Bouché from a dipteron named by the latter *Anthomyia runicis*, perhaps a *Pegomyia*, but which can hardly now be identified.

### 11. *Opius analis*, Wesm.

*O. analis*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 130;  
Hal., Ent. Mag., iv., 208, ♀.

Black; apex of the abdomen rufous. Face carinated; clypeus testaceous at the extremity, touching the mandibles, which are also testaceous; palpi very pale. Antennæ about twice as long as the body, 41—42-jointed; scape testaceous. Mesothorax smooth and shining, its sutures effaced. Mesopleuræ with an impunctate furrow. A punctiform impression before the scutellum. Metathorax finely rugulose. Wings ample, much longer than the body, faintly infumated; nervures fuscous, more or less pale; stigma fusco-testaceous, elongate, lanceolate, emitting the radius at  $\frac{1}{3}$  of its length; 1st abscissa as long as the width of the stigma; 2d not much longer than the 1st intercubital nervure; 3d curved; 2d intercubital nervure more or less obsolete, as also are the cubital and anal nervures towards their extremities; recurrent nervure everted; podiscoidal areolet completely closed. Legs elongate, slender, testaceous; tips of hind tibiæ, together with the hind tarsi, fuscous. Abdomen elongate-ovate, apiculated posteriorly; 1st segment longitudinally rugulose, black; the second and following somewhat piceous, usually passing into rufous towards the anus. Terebra subexserted. Male unknown. Length,  $1\frac{1}{4}$ ; wings,  $3\frac{1}{2}$  line.

Originally described by Wesmæel from a ♀ with broken antennæ; Haliday possessed only two specimens from North Ireland and England. I have taken 5 in Essex, Monmouthshire, and Cornwall. The species is more easily identified than most of the preceding: it is strange that Wesmæel should compare it with his *O. maculipes* and *ochrogaster* (spp. 19, 17), both of which are obviously different in structure, colour, and size.

12. *Opius vindex*, Hal.

*O. vindex*, Hal., Ent. Mag., iv., 210, ♂.

Black; mouth testaceous; mandibles emarginate at the base beneath; clypeus not touching the mandibles. Antennæ 37-jointed, one-half longer than the body; scape testaceous. Mesothorax (pierced with a pin, so that the place of the species cannot be determined). Mesopleuræ with an impunctate furrow. Metathorax rugulose, smooth in the middle. Second cubital areolet very short, *i. e.*, 2d abscissa of the radius hardly longer than the 1st intercubital nervure; recurrent nervure everted. Legs testaceous. Female unknown. Length,  $1\frac{1}{2}$  line.

Taken once by Haliday in North Ireland. Resembles the ♂ of *O. sævus* (sp. 15), but appears to be distinct. It is not likely to be recognised from the above short description.

13. *Opius celsus*, Hal.

*O. celsus*, Hal., Ent. Mag., iv., 209, ♂.

Black; antennæ much longer than the body, 33—36-jointed; joints 1—2 rufo-piceous; base of 3d joint testaceous. Clypeus touching the mandibles. Mesothoracic sutures effaced. A punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax rugulose. Wings ample, much longer than the body, greyish subhyaline; squamula testaceous; nervures and stigma fuscous; the latter emitting the radius before  $\frac{1}{2}$  of its length; recurrent nervure everted; radius slightly curved; 2d cubital areolet not attenuated outwards; 1st abscissa very oblique, about twice as long as broad; podiscolidal areolet open at the extremity; neuration of the hind wings distinct. Legs flavo-testaceous; tips of the tarsi infuscated; sometimes a fuscous spot at the base of the hind coxæ. Abdomen thinly beset with long pale hairs; oval in the ♂, circular in the ♀; 1st segment finely rugulose. Terebra subexserted. ♂ ♀. Length, 1— $1\frac{1}{4}$ ; wings,  $2\frac{1}{2}$ — $3\frac{1}{2}$  lines.

The ♂ much resembles that of *O. sævus* (sp. 15), except that the upper and lower sides of the 2d cubital areolet are nearly parallel. In the ♂ of *O. cingulatus*, Wesm. (sp. 20), the radial areolet and stigma are broader, and the sculpture of the metathorax and 1st abdominal segment coarser. Haliday omits the locality of this species, but I captured several in a wood near Nunton, Wilts, including the ♀, which does not differ materially from the other sex.

14. *Opius crassipes*, Wesm.

*O. crassipes*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 127; Hal., Ent. Mag., iv., 209, ♀.

Black; mandibles testaceous in the middle, emarginate beneath at the base; palpi blackish. Face distinctly carinated; clypeus not reaching the mandibles, rounded at the extremity. Antennæ entirely black, 27-jointed, as long as the body. Mesothoracic sutures complete, shallow, ending in a punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax finely rugulose. Wings ample, much longer than the body, hyaline, stigma and nervures pale fuscous; stigma elliptic, shorter and thicker than in *instabilis*, *pygmæator*, and *apiculator* (spp. 16, 3, 4), emitting the radius just before the middle; radial areolet ending at some distance from the extremity of the wing; radius slightly curved; recurrent nervure conspicuously everted; 1st abscissa of the radius very short, nearly as broad as long. Legs unusually stout, testaceous; coxæ, 1st joint of trochanters, base of femora, as well as their upper and sometimes their lower edges, blackish; tarsi and tips of hind tibiæ fuscous. Abdomen short, convex; 1st segment finely rugulose. Terebra as long as  $\frac{1}{2}$  of the abdomen. Male unknown. Length, 1; wings,  $2\frac{3}{4}$  lines.

Taken by Wesmael once only near Brussels: that author adds that he possessed a ♂ corresponding in all respects, except that the legs were more slender, whence he was led to doubt whether it belonged to the species; analogy, however, tends to show that the slenderness of the legs is likely to be merely a sexual distinction. Haliday found two females in North Ireland, and I have four, captured at Niton, in the I. of Wight, and in the London district. This species constitutes Förster's genus *Hypocynodus*.

15. *Opius sævus*, Hal.

*O. sævus*, Hal., Ent. Mag., iv., 209, ♂ ♀.

Black; clypeus and mandibles testaceous, the former not touching the latter. Mandibles not emarginate at the base. Antennæ longer than the body, black with the scape testaceous, 29-jointed in the ♀, 33–34-jointed in the ♂. Mesopleuræ with an impunctate furrow. A punctiform impression before the scutellum. Metathorax rugulose. Wings hyaline; squamula testaceous; stigma and nervures fuscous; stigma much attenuated, linear-lanceolate, emitting the radius before  $\frac{1}{2}$  of its length; radial areolet



reaching the extremity of the wing; 2d cubital areolet moderately long, scarcely attenuated outwards; recurrent nervure subinterstitial. Pobrâchial transverse nervure of the hind wings distinct. Legs testaceous. First abdominal segment stout, rugulose, with two basal carinæ. Terebra not exerted. This species is larger than *instabilis* (sp. 16), with longer antennæ, much more ample wings, a longer radial areolet, and the recurrent nervure differently inserted. Length,  $1\frac{1}{2}$ ; wings,  $3\frac{1}{2}$  lines.

Both sexes taken by Haliday in the Hebrides in August; a ♀ in Devonshire by Walker.

### 16. *Opius instabilis*, Wesm.

*O. instabilis*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 126; Hal., Ent. Mag., iv., 209, ♂ ♀.

♀. Black, abdomen more or less piceous, the 2d segment sometimes paler above. Face faintly carinated; clypeus and mandibles testaceous; clypeus raised, not closing the mouth; mandibles much dilated at the base; palpi testaceous. Antennæ as long as the body, 20-jointed (in the ♀ specimens), submoniliform towards the apex. Mesothoracic sutures indicated in front by two small humeral foveæ. A punctiform impression before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax smooth, shining. Wings hyaline, somewhat whitish; nervures and stigma fusco-testaceous; stigma about six times as long as its greatest width, emitting the radius at  $\frac{1}{3}$  of its length; 1st abscissa as long as half the thickness of the stigma; 2d abscissa almost twice as long as the 1st intercubital nervure; 3d abscissa straight, ending at some distance from the extremity of the wing; recurrent nervure conspicuously everted, so that the 2d cubital areolet becomes pentagonal. Legs testaceous; hind coxæ blackish, with the inner side testaceous; middle of hind femora, tips of their tibiæ, and their tarsi, fuscous. Abdomen depressed; 1st segment slightly rugulose. Terebra somewhat longer than a quarter of the abdomen.

♂. Antennæ 22—24-jointed, joints 1—3 testaceous beneath, 3d joint and base of 2d testaceous above. Lower part of face, and cheeks, testaceous. Legs testaceous; hind coxæ sometimes obscure at the apex. Length, 1; wings,  $2\frac{1}{4}$  lines.

? Var. 1. Antennæ entirely black, 25-jointed ♀, 27-jointed ♂. Clypeus black at the base; lower portion of the cheeks testaceous, more or less obscure. Four posterior coxæ blackish above. Wesmael.

Both sexes may be distinguished from the similar

*pygmæator* (sp. 3) by the punctiform impression before the scutellum, and by the insertion of the recurrent nervure. Taken by Haliday sparingly in North Ireland, and by Capron at Shiere, near Guildford; to the latter I am indebted for two ♀ specimens. Wesmael possessed 5 Belgian examples, 2 belonging to the variety.

### 17. *Opius ochrogaster*, Wesm.

*O. ochrogaster*, Wesm., *Nouv. Mém. Ac. Brux.*, 1835, p. 129, ♀, pl. ii., fig. 8 (wing).

Black; abdomen, after the 1st segment, testaceous. Face distinctly carinated; clypeus testaceous, reaching the mandibles and closing the mouth; mandibles and palpi testaceous. Antennæ longer than the body, 26—28-jointed, dull testaceous, fuscous towards the apex. Mesothoracic sutures faintly indicated in front. A punctiform impression before the scutellum. Mesopleuræ with no visible furrow. Metathorax granulated, dull. Wings hyaline, stigma and nervures dull testaceous; stigma forming a shorter and broader oval than in *O. cingulatus* and *maculipes* (spp. 20, 19), and emitting the radius from a point nearer the middle; but the chief distinction lies in the direction of the radius—this makes a blunt angle at the 2d intercubital nervure, hardly greater than a right angle, and proceeds thence to the margin far from the extremity, and rather on the upper side of the wing; 2d cubital areolet short, attenuated outwards; podiscoidal areolet open at the extremity; recurrent nervure everted. Legs testaceous. First abdominal segment black, longitudinally rugulose; the following segments in the ♀ testaceous, in the ♂ the 3d and following segments are broadly fuscous on the hind margin. Terebra subexserted. Length, 1—1½; wings, 3—3½ lines.

I have met with both sexes of this species at Milford Haven and in Leicestershire; it was not known to Haliday, and Wesmael described it from a single Belgian specimen. It is easily mistaken for *maculipes* or *cingulatus*, but can be distinguished by the wings; compare *O. nitidulator* (sp. 25), in which the radius takes the same direction.

### 18. *Opius compar*, n. sp.

Testaceus, mesothorace, metathorace, et abdominis segmento 1mo nigris. Caput crassiusculum, facie non carinata. Clypeus valde transversus, antice rectus, mandibulas apice nigras modo non

attingens. Palpi pallidi. Antennæ feminæ corpore longiores, 26-articulate, articulo 7mo et sequentibus fuscis, 3tio quam 4tus paulo longiore. Mesopleuræ sulco lato, impunctato. Mesothoracis sulculi tenuissimi at completi, foveolam versus punctiformem præ scutello conniventes. Thorax undique niger; metathorax rufo-piceo tinctus, nonnihil rugulosus, basin versus læviusculus. Alæ hyalinæ; areola radialis ad apicem usque producta; stigma una cum nervis, sordide testaceum, elongatum, radium ante trientem longitudinis suæ emittens; areola cubitalis 2da elongata, extus angustata; areola podiscoidalis subaperta; nervus recurrens longius evector. Pedes testacei, pallidi, unguiculis fuscis. Abdomen ovale, convexum, testaceum, apicem versus gradatim obscurius, apice ipso fere nigro; segmentum 1um breve, nigrum, basi ipsa testacea, rugulosum, ubique æquilatum, tuberculis paulo pone medium prominentibus; cætera lævia, nitida. Terebra segmentis duobus ultimis longitudine æqualis. Mas incognitus.

Testaceous, meso- and metathorax, together with the 1st abdominal segment, black. Head large; face not carinated. Clypeus very transverse, straight on its lower edge, not quite reaching the mandibles, which are black at the points. Palpi pale. Antennæ ♀ longer than the body, 26-jointed, the 7th and following joints fuscous; 3d joint somewhat longer than the 4th. Prothorax testaceous. Mesopleuræ with a broad impunctate furrow. Mesothoracic sutures faintly traced, complete, ending in a punctiform fovea before the scutellum. Metathorax inclining to rufo-piceous, subrugulose, smoother towards the base. Wings hyaline; radial areolet reaching the extremity; stigma and nervures dull testaceous; stigma elongate, emitting the radius before  $\frac{1}{2}$  of its length; 2d cubital areolet elongate, attenuated outwards; podiscoidal areolet incompletely closed; recurrent nervure conspicuously evector. Legs pale testaceous, only the claws dusky. Abdomen ovate, convex, testaceous, gradually infuscated towards the apex, which is nearly black; 1st segment short, black, testaceous at the extreme base, rugulose, of equal width throughout, with visible tubercles just beyond the middle; the other segments smooth and shining. Terebra as long as the two last segments. Male not known. ♀. Length,  $\frac{3}{4}$ ; wings,  $2\frac{1}{2}$  lines.

Smaller than *O. cingulatus* and *maculipes* (spp. 20, 19), and distinguished by the large testaceous head, the visible mesothoracic sutures, &c. I captured the only specimen near Nunton, Wilts.

19. *Opius maculipes*, Wesm.

*O. maculipes*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 128; Hal., Ent. Mag., iv., 210, ♂ ♀.

Black; abdomen ♀ testaceous, except the 1st segment; in the ♂ testaceous, with the apex blackish. Face distinctly carinated; clypeus sometimes black at the base, rather widely separated from the mandibles, which are dilated at the base, and gradually diminish to the points. Palpi testaceous. Antennæ longer than the body, 33—35-jointed, under side of the 1st joint and extremity of the 2d more or less rufo-testaceous. Mesothoracic sutures effaced. Mesopleuræ with an impunctate furrow. A punctiform impression before the scutellum. Metathorax finely granulated, dull. Wings hyaline; nervures and stigma fusco-testaceous; stigma elongate-oval, emitting the radius before the middle; 1st abscissa very short, almost punctiform; 3d slightly curved; 2d cubital areolet attenuated outwards; recurrent nervure everted. Legs testaceous, tips of the hind tibiæ fuscous. Abdomen elongate-oval; 1st segment black, rugulose, smoother at the base; the following segments testaceous; in the ♂ the 3 apical segments are blackish. Terebra subexserted. Length,  $\frac{3}{4}$ — $1\frac{1}{2}$ ; wings,  $1\frac{1}{3}$ — $3\frac{1}{2}$ .

Distinguished from *O. cingulatus* (sp. 20) by the fuscous tips of the hind tibiæ, and the absence of dark margins to the intermediate segments; the 2d cubital areolet is not so much narrowed outwards, and the abdomen is longer and narrower; also the podisoidal areolet is generally more completely closed, the transverse nervures reaching the bottom, which is hardly the case in *O. cingulatus*. Hence Förster established a new genus *Nosopæa* for the latter species; but the character employed for distinction is often inappreciable, or even reversed, in the two species. *O. maculipes* is one of the commonest in the genus; Wesmæl described it from 6 females and 5 males taken in May and June near Brussels. Haliday found a pair on a willow in North Ireland in May, and a ♀ in August near the Shannon; his specimens were smaller than *cingulatus*, ranging from  $\frac{3}{4}$  to 1 line, while the Belgian specimens are described as larger; Walker's specimen, taken in England, was the smallest of all. I possess 8 from different parts of the country, and Dr. Reinhard sent me one from Dresden.

20. *Opius cingulatus*, Wesm.

*O. cingulatus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 120; Hal., Ent. Mag., iv., 210, ♀ ♀.

Black; 1st abdominal segment black, the rest testaceous with dusky margins. Face faintly carinated; cheeks often testaceous beneath; clypeus short, somewhat raised, not touching the mandibles; both testaceous; palpi very pale. Antennæ longer than the body, 25—35-jointed, black, the 1st joint and end of the 2d testaceous, or the 3 first joints, or more, testaceous; 3d joint more or less elongate. Mesothoracic sutures effaced. Mesopleuræ with an impunctate furrow. A punctiform impression before the scutellum. Metathorax subrugulose, dull, often more or less lævigated towards the base. Wings hyaline; nervures and stigma fusco-testaceous; radial areolet reaching the extremity; stigma elongate, emitting the radius before  $\frac{1}{3}$  of its length; 2d cubital areolet elongate, attenuated outwards; podiscoidal areolet imperfectly closed; recurrent nervure everted. Legs testaceous; tips of hind tibiæ not fuscous, as in the preceding sp. First abdominal segment black, short, usually rugulose towards the apex; the following segments smooth, shining, testaceous, each having a transverse dusky band before the hind margin. Terebra not longer than the last segment. Length,  $1\frac{1}{4}$ ; wings, 3 lines.

Var. 1. The dusky bands on the abdomen widened and coalescing, so that only the 2d segment, or part of it, remains testaceous.

A common species, and difficult to separate from the preceding; see remarks on that species, *ante*. Nevertheless it constitutes by itself the genus *Nosopæa* of Förster. Wesmæel's description is taken from 14 Belgian specimens.

21. *Opius irregularis*, Wesm.

*O. irregularis*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 132; Hal., Ent. Mag., iv., 211, ♂ ♀.

Black; 2d abdominal segment rufo-piceous. Face hardly carinated; clypeus somewhat convex, not touching the mandibles, black with the lower edge sometimes testaceous. Mandibles and palpi testaceous. Antennæ longer than the body, 24—26-jointed, black, with the 1st joint, extremity of the 2d, and sometimes base of the 3d, testaceous. Mesothoracic sutures effaced. Mesopleuræ with an impunctate furrow. A punctiform impression before the scutellum. Metathorax rugulose. Wings hyaline; nervures and

stigma dull testaceous; radial areolet reaching the extremity; stigma narrow, elongate, emitting the radius at  $\frac{1}{3}$  of its length; 2d cubital areolet elongate, narrow, attenuated outwards; recurrent nervure rejected to a point near the extremity of the 1st cubital areolet, sometimes subinterstitial; podiscoidal areolet open at the extremity. First abdominal segment black, narrow, rugulose; the other segments form, in both sexes, a broad oval, almost circular; 2d segment more or less piceous, sometimes almost black, faintly rugulose on each side at the base; the remaining segments black. Terebra as long as the apical segment. Length,  $\frac{3}{4}$ ; wings,  $2\frac{1}{2}$  lines.

Not uncommon in England and Ireland. Described by Wesmæl from 6 Belgian specimens. This species forms the genus *Allotypus* of Förster.

### 22. *Opius leptostigmus*, Wesm.

*O. leptostigmus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 138; Hal., Ent. Mag., iv., 211, ♀.

Black; abdomen, after the 1st segment, rufo-testaceous. Face not carinated; clypeus testaceous at the extremity, which is somewhat rounded, and touches the mandibles, closing the mouth. Mandibles testaceous, deeply emarginate beneath. Palpi pale. Antennæ longer than the body, black with the 1st joint testaceous. Furrow of the mesopleuræ elongate, deeply crenate. Metathorax rugulose. Wings hyaline; radial areolet very long, reaching the extremity of the wing; 1st abscissa elongate, equalling at least the width of the 2d cubital areolet, which is narrower than in other species; stigma dull testaceous, linear, much elongated, emitting the radius somewhat before  $\frac{1}{3}$  of its length; podiscoidal areolet completely closed; recurrent nervure everted. Legs testaceous. Abdomen oblong, 1st segment forming about  $\frac{1}{3}$  of its length, widened gradually from the base to the extremity, longitudinally rugulose. Terebra slightly exerted. Male unknown. Length,  $1\frac{1}{4}$  line.

Unknown to me; Wesmæl possessed only one specimen, taken near Brussels; and Haliday another, at first confused with *O. cingulatus*; hence its locality was not recorded.

### 23. *Opius parvulus*, Wesm.

*O. parvulus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 139; Hal., Ent. Mag., iv., 211, ♂ ♀.

Black or piceous; 2d abdominal segment sometimes rufescent

at the base. Face faintly carinated; clypeus black, not raised or emarginate, but closing the mouth; mandibles and palpi testaceous, the former not emarginate beneath. ♀. Antennæ black, longer than the body, 21-jointed; 1st joint more or less rufous beneath. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Mesopleuræ impressed with an oval furrow having 4 or 5 striæ or crenations at the bottom. Metathorax smooth. Wings hyaline; radial areolet reaching the extremity; stigma and nervures fuscous, more or less pale; stigma elongate, attenuated; 2d cubital areolet much narrowed outwards; recurrent nervure everted. Legs testaceous or rufous; 4 posterior coxæ blackish above; tips of hind tibiæ, and their tarsi, darkened. Abdomen short-oval, black, or piceous; 1st segment in the ♀ almost smooth. Terebra somewhat longer than the apical segment. The ♂ differs in some respects; antennæ 22-jointed, 1st, 2d, and often base of 3d joint testaceous; clypeus testaceous, as well as the lower part of the face and cheeks; 1st abdominal segment rugulose; only the hind coxæ blackish above. Length,  $\frac{1}{2}$ — $\frac{3}{4}$ ; wings,  $1\frac{1}{2}$ — $2\frac{1}{4}$  lines.

This minute species at first sight resembles an Alysiiid of the genus *Aspilota*; it may also be mistaken for *O. pygmæator*, *apiculator*, &c. (spp. 3, 4); it requires a microscope for its determination. I possess a ♀ specimen taken in Leicestershire; Haliday seems to have had a greater number, and Wesmael speaks of 7 taken near Brussels. This species forms the genus *Desmiostoma* of Förster.

#### 24. *Opius docilis*, Hal.

*O. docilis*, Hal., Ent. Mag., iv., 211, ♂.

Black; base of the 1st abdominal segment piceous, and of the 2d testaceous; apex of cheeks, prothorax, and lateral sutures of the mesothorax, rufo-piceous. Face carinated; clypeus and mandibles testaceous, the latter emarginate at the base beneath; clypeus not touching the mandibles. Antennæ longer than the body, 31-jointed, black with the scape testaceous. Mesothoracic sutures effaced. No punctiform impression before the scutellum. Mesopleuræ with a rugose furrow. Metathorax rugulose. Wings hyaline; stigma and nervures fuscous; stigma broader than that of *O. pactus* (sp. 27), narrowly triangular; 1st abscissa of the radius effaced by the stigma; 2d cubital areolet longer than in sp. 27, very little attenuated outwards; podisoidal areolet closed; recurrent nervure everted; no pabrachial transverse nervure in the

hind wings. Legs testaceous. First abdominal segment rugulose. Female unknown. Length, nearly 1 line.

Unknown to me; taken once only by Haliday on the banks of the Shannon, in autumn.

25. *Opius nitidulator*, Nees. (Pl. II., fig. 5, wing).

*Bracon nitidulator*, Nees, Mon., i., 56; *O. nitidulator*, Hal., Ent. Mag., iv., 213, ♂.

Variable; black, diversified with rufous. ♀. Head rufous, with a large black spot covering the occiput and extending over the vertex to the base of the antennæ. Mandibles emarginate at the base, fuscous at the points. Clypeus not reaching the mandibles. Palpi dull rufous. Antennæ as long as the body, 28-jointed, filiform, black, scape and base of 1st joint of flagellum rufous. Prothorax black beneath, rufous above. Mesothorax smooth and shining, rufous, with large oblong black spots on the 3 lobes, whereof the middle one is abbreviated posteriorly. Mesothoracic sutures indicated by two humeral depressions, effaced posteriorly. Scutellum rufous, its transverse basal fovea black, crenulated. A punctiform impression before the scutellum. Mesopleuræ with a crenate furrow. Metathorax coarsely rugose. Wings subhyaline; squamulæ testaceous; stigma and nervures fuscous; stigma elongate-triangular, attenuated outwards, emitting the radius before the middle; radial areolet ending acutely on the fore border of the wing, at some distance from the extremity (as in *ochrogaster*, sp. 17); 2d cubital areolet much attenuated outwards; 1st abscissa of the radius as long as the 2d intercubital nervure; recurrent nervure everted; hind wings broad, with all the nervures distinct. Legs short, stout, rufo-testaceous; a blackish spot at the base of the hind coxæ; tarsi infuscated, except at the base. Abdomen oblong, depressed, as long and as wide as the head and thorax; 1st segment coarsely rugose, short, broad, excavated at the base; the following segments smooth, thinly beset with fine pale hairs; 2d and 3d segments dark rufous (in my specimen), with the hinder margins indeterminately black. Terebra concealed. ♂. Similar, with some slight differences:—Antennæ longer, 34-jointed; clypeus black at the base, or at the hinder angles. Mesothoracic sutures indicated by 4 red lines, of which the 2 inner ones are united posteriorly to each other, and anteriorly to the 2 lateral lines. Scutellum black. Abdomen longer and narrower than that of the ♀; segments 2—3 nigro-piceous. The colours probably vary in different individuals. Length,  $1\frac{1}{2}$ — $1\frac{3}{4}$ ; wings,  $3\frac{1}{2}$  lines.



Unknown to Wesmael; Nees v. Esenbeck and Haliday each possessed a ♂, taken by the former on a cherry-tree at Sickershausen, and by the latter among willows in North Ireland. I have captured both sexes, the ♂ in Leicestershire, the ♀ at Bishop's Teignton, in Devonshire. Dr. Capron, I believe, has found the species at Shiere, near Guildford. This rare insect differs considerably from all the preceding, approaching *Biosteres* and *Diachasma* in size and general appearance, though not in the wings.

### 26. *Opius æthiops*, Hal.

*O. æthiops*, Hal., Ent. Mag., iv., 212, ♂.

Black; palpi short, fuscous; mandibles rufous; clypeus not reaching the mandibles. Antennæ black, as long as the body, 21-jointed. Mesothoracic sutures inchoate, effaced posteriorly. Mesopleuræ with a crenate furrow. A punctiform impression before the scutellum. Metathorax rugulose, smooth and shining in the middle. Wings hyaline; stigma and nervures fuscous; stigma narrow, almost linear; radial areolet ending before the extremity of the wing; 2d cubital areolet elongate, hardly attenuated outwards; podisoidal areolet imperfectly closed; recurrent nervure everted; pabrachial transverse nervure of the hind wings inchoate. Legs piceous, base of all the tibiæ, and apex of the fore femora, paler. First abdominal segment sublinear, punctulate; the following segments smooth. Female unknown. Length,  $\frac{3}{8}$  line.

Unknown to me. No locality is given by Haliday. Similar at first sight to the ♂ of *pygmæator* (sp. 3), but different in sculpture, having more transparent wings, a smaller radial areolet, and a longer 2d cubital.

### 27. *Opius pactus*, Hal.

*O. pactus*, Hal., Ent. Mag., iv., 212, ♀.

Black; base of 2d abdominal segment rufo-testaceous. Mandibles rufo-testaceous. Clypeus not reaching the mandibles. Antennæ rather longer than the body, 29-jointed, black, the scape rufo-testaceous. Mesothoracic sutures inchoate, effaced posteriorly. Mesopleuræ with a crenate furrow. A punctiform impression before the scutellum. Metathorax dull, rugose. Wings like those of *spretus* (sp. 7), but broader, and having the 2d cubital areolet less attenuated outwards; stigma narrow, linear-lanceolate; 1st abscissa of the radius very short, but distinct; recurrent nervure

everted. No pobrachial transverse nervure in the hind wings. Legs rufo-testaceous. First abdominal segment rugose, dull, with 2 basal carinæ. Terebra subexserted. Male unknown. Length, 1 line.

No habitat given. The description is probably insufficient to identify the species.

### 28. *Opius æmulus*, Hal.

*O. æmulus*, Hal., Ent. Mag., iv., 212, ♀.

Black; base of the 2d abdominal segment testaceous, the following segments fuscous. Clypeus and mandibles testaceous, the former narrowly separated from the latter. Antennæ slender, longer than the body, 27-jointed, testaceous, fuscous towards the apex; the joints elongate, as in *pallidipes* (sp. 10). Mesothoracic sutures inchoate, effaced posteriorly. A punctiform impression before the scutellum, Mesopleuræ with a narrow furrow, crenulate at the bottom. Metathorax minutely rugulose. Wings hyaline; radial areolet almost reaching the extremity; stigma very narrow, elongate, dull testaceous; recurrent nervure everted. Legs flavo-testaceous. First abdominal segment linear, rugulose. Terebra almost as long as  $\frac{1}{4}$  of the abdomen, perhaps accidentally protruded. Male unknown. Length, 1 line.

This species, now unknown, is compared by Haliday to *pallidipes*, from which it differs chiefly by the oral aperture, and the crenulate furrow of the mesopleuræ. Only one specimen occurred, the locality of which is not given. Compare the following species.

### 29. *Opius zelotes*, n. sp.

♂. Niger, nitidus, abdominis segmento 2do interdum basi supra picescente; orbitis et genarum apice nonnunquam rufis. Facies subtiliter punctulata, vix nitida, convexa, non carinata; clypeus brevis, transversus, elevatus, a mandibulis longius distans; clypeus cum mandibulis testaceus; hæ apice nigræ; palpi testacei. Antennæ corpore multo longiores, 37—38-articulatæ, nigræ, scapo sordide rufo. Mesothoracis sulculi inchoati, posterius deleti. Foveola oviformis præ scutello. Mesopleuræ sulco lato irregulariter crenato impressæ. Metathorax rugulosus basi læviuscula. Alæ hyalinæ stigmatæ, nervis, fuscis, squamula testacea; stigma elongatum, triquetrum, radium e dimidio priore emittens; areola radialis usque ad apicem alæ extensa; abscissa 3tia curvata; areola cubitalis 2da extus perparum attenuata; nervus recurrens

evectus; areola podiscoidalis oclusa. Alarum inferiorum nervus transversus pobrachialis omnino nullus. Pedes flavidi, tarsorum articulo ultimo obscuro. Abdomen ovale, segmento 1mo ruguloso, brevi, lineari, bicarinato, tubereulis conspicuis; segmenta cætera lævissima. Femina latet.

♂. Black, smooth and shining, 2d abdominal segment sometimes slightly piceous at the base; orbits and apex of cheeks occasionally rufous. Face minutely punctulate, hardly shining, convex, not carinated; clypeus short, transverse, elevated, not nearly touching the mandibles; clypeus and mandibles testaceous, the latter black at the points; palpi testaceous. Antennæ much longer than the body, 37—38-jointed, black; scape dull rufous. Mesothoracic sutures inchoate, effaced posteriorly. An oval impression before the scutellum. Mesopleuræ with a wide furrow, irregularly crenate. Metathorax rugulose, smoother at the base. Wings hyaline; stigma and nervures fuscous; squamula testaceous; stigma elongate, triangular, emitting the radius before the middle; radial areolet reaching the apex of the wing; 3d abscissa curved; 2d cubital areolet very slightly attenuated outwards; recurrent nervure evected; podiscoidal areolet closed. Hind wings with no vestige of a pobrachial transverse nervure. Legs flavo-testaceous; apical joint of tarsi dusky. Abdomen ovate; 1st segment rugulose, short, linear, bicarinated, with visible tubercles; the rest very smooth and shining. Female unknown. Length,  $1\frac{1}{2}$ ; wings, 4 lines.

A large species, which would be a *Biosteres* if the 2d cubital areolet were less prolonged. It nearly approaches the preceding species, *æmulus*, but the size is much greater, and the antennæ have too many joints, even when allowance is made for the difference of sex; it is hardly probable, therefore, that this can be the unknown ♂ of *æmulus*. I have three specimens from Devonshire, one of which was taken by Bignell, the others by myself at Cornworthy.

### 30. *Opius polyzonius*, Wesm.

*O. polyzonius*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 136; Hal., Ent. Mag., iv., 213, ♀.

Black; mouth, orbits of the eyes, prothorax and abdomen, rufo-testaceous; 1st segment black, the rest margined with fuscous posteriorly. Head testaceous; middle of the front and of the vertex, occiput, and margins of the cheeks, black. Clypeus rufo-

testaceous, not touching the mandibles. Palpi testaceous. Antennæ longer than the body, black, with the 1st joint and the extremity of the 2d testaceous. Mesothoracic sutures inchoate, effaced posteriorly. Furrow of the mesopleuræ deeply crenulate. A punctiform impression before the scutellum. Metathorax rugulose. Wings hyaline; nervures and stigma fusco-testaceous; radial areolet almost reaching the extremity of the wing; stigma narrow, elongate, emitting the radius at about  $\frac{1}{2}$  of its length; 1st abscissa longer than the thickness of the stigma; 3d slightly curved; 2d cubital areolet elongate, hardly attenuated outwards; podisoidal areolet closed; recurrent nervure everted. Pobrachial transverse nervure of the hind wings inchoate. Legs testaceous. First abdominal segment black, rugulose. Terebra subinserted. Male not described. Length,  $1\frac{1}{4}$  line.

Wesmael and Haliday had each a single specimen. I possess a ♂ from Walker's collection supposed to be of this species, but it is in too bad a condition to be described; its antennæ are 32-jointed.

### 31. *Opius ruficeps*, Wesm.

*O. ruficeps*, Wesm., *Nouv. Mém. Ac. Brux.*, 1835, p. 143, ♀, pl. ii., fig. 9 (wing); 1838, p. 146, ♂.

♀. Form robust; black, head rufous, except the stemmaticum. Clypeus remote from the mandibles, and like them, rufo-testaceous; palpi dusky; face strongly carinated. Antennæ longer than the body, 34-jointed, the joints short; black, 1st joint testaceous. Mesothoracic sutures deeply impressed. Furrow of the mesopleuræ strongly crenated. Metathorax rugose. Wings infumated as far as the stigma, thence to the extremity hyaline; stigma and nervures blackish; radial areolet reaching the extremity of the wing; 2d cubital areolet moderately attenuated outwards; stigma broad, oval, emitting the radius somewhat beyond the middle; 2d abscissa a little longer than the 1st intercubital nervure; podisoidal areolet completely closed; recurrent nervure everted. Hind wings with a radius faintly traced but discernible; no pobrachial transverse nervure. Legs rufo-testaceous; all the tarsi, and base of the hind coxæ, black. Abdomen short, broad, subcircular; 1st segment mostly rugose, with an unequal surface, somewhat shining, bicarinate at the base, the carinæ converging posteriorly. Terebra not surpassing the anus. ♂. Similar; abdomen narrower, less rounded at the sides. Length,  $1\frac{1}{2}$  line.

Wesmael discovered both sexes in Belgium; and I

believe Dr. Capron has met with the species in his neighbourhood. It forms the genus *Therobolus*, Först. According to Brischke (Schr. Nat. Ges. Danzig, 1878, p. 108) it has been bred from the maggots of *Pegomyia conformis*, Fall. The ambiguous character of the wings would allow this species to enter the genus *Diachasma*, if it were not that the 2d abscissa is a little too long.

### 32. *Opius bajulus*, Hal.

*O. bajulus*, Hal., Ent. Mag., iv., 214, ♂.

♂ ♀. Black, shining. Face punctulate, with an indistinct carina; clypeus not touching the rufous mandibles; palpi fuscous. Antennæ longer than the body, 29-jointed in both sexes, black with the scape reddish. Mesothoracic sutures meeting in a linear fovea before the scutellum, which is gibbous, flattened at the top, finely margined and transversely rugulose; its cancellated basal fovea is rather large. Mesopleuræ with a crenate furrow. Metathorax rugulose. Wings hyaline; squamula piceous; nervures and stigma fuscous; radial areolet ending rather obtusely before the extremity of the wing; stigma elongate, lanceolate, emitting the radius before  $\frac{1}{2}$  of its length; 2d cubital areolet as long as the 3d, not attenuated outwards; recurrent nervure conspicuously everted. Hind wings with an inchoate pabrachial transverse nervure. Legs rufo-testaceous; coxæ black. Abdomen ovate, acuminate behind; 1st segment obconic, short, striolated; the rest very smooth and shining. Terebra concealed. The sexes are similar. Length, 1—1 $\frac{1}{4}$ ; wings, 2 $\frac{3}{4}$ —3 $\frac{1}{2}$  lines.

Haliday had for description the broken remains of a ♂ taken by Walker in King's Wood, Hampton; two ♀ specimens are in my collection, captured in a wood near Nunton, in Wilts. The rugosity of the scutellum and the black coxæ make the species easy to identify; the former character is repeated in several species of *Biosteres*. *O. bajulus* forms the genus *Biophthora*, Först.

### 33. *Opius truncatus*, Wesm.

*O. truncatus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 137; Hal., Ent. Mag., iv., 214, ♂ ♀.

Black; clypeus, mandibles, and palpi, testaceous. Face distinctly carinated; clypeus not touching the mandibles. Antennæ longer than the body, 38—39-jointed, black with the 1st joint testaceous. Anterior margin of the mesonotum abruptly truncate,

terminated on each side by an angle, above which is a rather deep fovea indicating the commencement of the mesothoracic sutures. An oblong fovea before the scutellum. Mesopleuræ with a crenate furrow. Metathorax somewhat rugose, with two small parallel approximated ridges near the extremity. Wings hyaline; stigma and nervures fuscous; stigma subtriangular, not much elongated, emitting the radius just before the middle; radial areolet rather narrowed outwards, yet reaching the extremity of the wing; 2d cubital areolet much attenuated outwards; podiscoïdal areolet completely closed; recurrent nervure everted. Hind wings with no vestige of the præbrachial transverse nervure. Legs testaceous. Abdomen short, oval, subcircular; 1st segment without rugosity, shining, almost smooth, much widened from the base to the extremity, the disk elevated; at the base are two carinæ, which become effaced before the middle. Terebra subexserted. Length,  $1\frac{1}{2}$ ; wings,  $3\frac{1}{2}$  lines.

Very similar to *reconditor* (sp. 36), but different in the angular gibbosity of the mesothorax, in size, and in the number of joints of the antennæ. Wesmael described a pair found near Brussels; I have captured a ♀ in Yorkshire; the London district, Windsor, and the I. of Wight are other localities mentioned by Haliday.

#### 34. *Opius rudis*, Wesm.

*O. rudis*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 141;  
Hal., Ent. Mag., iv., 214, ♂ ♀.

Black; orbits of the eyes, and base of 2d abdominal segment, rufous. Head minutely rugulose, not shining; occiput smooth above; clypeus not touching the mandibles, elevated, rounded anteriorly, rufo-testaceous like the mandibles; palpi testaceous. Antennæ a little longer than the body, 28—29-jointed. Mesothorax minutely rugulose, dull on the sides, more shining on the disk; sutures distinct, crenulate. Mesopleuræ impressed with a wide fovea, rugose or crenate at the bottom. Metathorax rugose. Wings hyaline; nervures and stigma fuscous; the latter linear-lanceolate; radial areolet reaching the extremity of the wing; 2d cubital areolet much attenuated outwards; podiscoïdal areolet not completely closed; recurrent nervure everted in the ♀ (? interstitial in the ♂). Hind wings with no vestige of the præbrachial transverse nervure. Legs rufo-testaceous, tarsi dusky. Abdomen short, suborbicular; 1st segment black, rugose; 2d sometimes wholly black, but generally more or less rufo-testaceous on its

basal half, which is covered with minute and close punctuation, visible only under a good lens; in the ♂ the 2d segment is more often wholly black. *Terebra* subexserted. Length, 1—1 $\frac{1}{4}$  line.

I have not seen this species, which is described by Wesmael from 8 females and 1 male. That author expresses a doubt as to the specific identity of two additional males, which differed (1) in having a distinct carina on the upper part of the face; (2) the face, and sides of the thorax, more shining, and with less rugosity; (3) the tubercles of the 1st abdominal segment very prominent; and (4) the radial areolet rather longer. According to Haliday a specimen of *O. rudis* was taken by Walker in the London district.

### 35. *Opius cæsus*, Hal.

*O. cæsus*, Hal., Ent. Mag., iv, 215, ♂ ♀.

Black, hardly shining, vaguely punctulate, pubescent; 2d abdominal segment finely rugulose. Face subcarinate; clypeus widely separated from the testaceous mandibles. Antennæ 21—24-jointed. those of the ♀ as long as the body, of the ♂ longer. Mesothoracic sutures faintly traced, punctulate, not meeting behind; humeral angles somewhat prominent. Mesopleuræ with a wide rugose furrow. Metathorax rugulose. Wings hyaline; squamula piceous; nervures and stigma fuscous; stigma very much attenuated; 2d cubital areolet hardly attenuated outwards; recurrent nervure evected. Hind wings with no vestige of the præbrachial transverse nervure. Legs elongate, testaceous; apex of the 4 posterior femora and of their tibiæ, or almost the whole of the tibiæ, fuscous, as well as the tarsi; sometimes the legs are altogether testaceous. Abdomen ♀ broadly ovate, subdepressed; narrower in the ♂; 1st segment short, broadly obconic, gibbous, rugulose, with 2 basal carinæ; 2d segment broadly and minutely rugulose or scabrous, obliquely impressed on each side of the base, the impressions joining to form an arc. *Terebra* subexserted. Length,  $\frac{3}{4}$ —1 line.

According to Haliday, found rarely in damp meadows of England and Ireland.

### 36. *Opius reconditor*, Wesm.

*O. reconditor*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 134; Hal., Ent. Mag., iv., 213, ♂ ♀.

Black; face carinated; clypeus black in the ♀, rufo-testaceous

in the ♂, not touching the mandibles; palpi and mandibles rufo-testaceous. Antennæ longer than the body, 28—35-jointed, black, with the scape testaceous. Mesothoracic sutures indicated by two smooth foveæ, not completed posteriorly. A punctiform impression, sometimes elongated, before the scutellum. Mesopleuræ with a rather deep oblong fovea, more or less crenulate or unequal at the bottom. Metathorax rugose. Wings hyaline; squamula flavo-testaceous; nervures and stigma fuscous, the latter elongate-triangular or lanceolate, proportionally broader in large specimens; radial areolet reaching the extremity of the wing; 2d cubital areolet short, much attenuated outwards; podiscoidal areolet closed; recurrent nervure everted. Legs flavo-testaceous; coxæ very pale. Abdomen of the ♀ suborbiculate, oblong in the ♂; 1st segment rugulose; 2d usually piceous towards the base. Terebra not surpassing the anus. Length, 1—1½; wings, 2¼—3⅓ lines.

Var. 1. Basal half, or more, of 2d abdominal segment testaceous, ♂ ♀.

Var. 2. Like the preceding; but the prothorax is testaceous, the humeral angles of the mesothorax obscurely testaceous, and the clypeus rufous, like the mandibles, ♀.

Var. 3. Like Var. 1, but with the face, orbits, clypeus, and hind margins of the posterior abdominal segments, testaceous.

A common species in Belgium; Wesmael's description was derived from 20 specimens. Haliday received several from Walker, collected in the London district, and belonging to var. 3; the two which I possess are from Yorkshire and the New Forest; they have the colouring of Wesmael's types.

### 37. *Opius cælatus*, Hal.

*O. cælatus*, Hal., Ent. Mag., iv., 216, ♂.

Black; head oblate, punctate; occiput smooth; face rugulose, subcarinate; clypeus separated from the mandibles by a wide semicircular interval; mandibles testaceous; palpi pale, elongate. Antennæ much longer than the body, 41-jointed, blackish, scape more or less rufous. Thorax longer than usual, thickly punctulate, somewhat dull. Mesothoracic sutures complete; a smooth space on each of the lateral lobes, the medial lobe vaguely punctate. Mesopleura with a crenate furrow. Wings hyaline; squamula rufo-testaceous; nervures fuscous; stigma fusco-testaceous, narrow, linear, emitting the radius before  $\frac{1}{3}$  of its length; 2d cubital areolet not attenuated outwards; recurrent nervure conspicuously rejected. Præbrachial transverse nervure of the hind wings



distinct. Legs testaceous; apex of hind tibiæ, and their tarsi, fuscous. Abdomen oblong; 1st segment elongate, linear, finely rugulose; the following segments very smooth. Female unknown. Length, 2; wings,  $4\frac{1}{2}$  lines.

Haliday was acquainted with a single specimen, sent to him from England; I possess another, taken near Barnstaple, in bad condition.

### 38. *Opius testaceus*, Wesm.

*O. testaceus*, Wesm., Nouv. Mém. Ac. Brux., 1838, p. 146, ♂ ♀. (Pl. II., fig. 6, ♀).

Bright testaceous; ♀ clypeus not touching the mandibles, which are black at the points. Antennæ a little longer than the body, 38-jointed, black, the scape testaceous. Mesothoracic sutures distinct, impunctate, ending in a punctiform impression before the scutellum. Metathorax rugulose. Wings subhyaline; nervures fusco-testaceous; stigma large, elongate, ovate, blackish or fuscous, with the extremity paler; radial areolet not quite reaching the extremity of the wing; 1st abscissa shorter than the thickness of the stigma; 2d cubital areolet elongate, attenuated outwards; recurrent nervure interstitial or subvected; podiscoidal areolet closed, nearly as large as the prædiscoidal. Legs testaceous; last joint of the tarsi blackish. Abdomen oval, convex; 1st segment broad, the disk elevated, with two longitudinal ridges, and a few intermediate striæ. Terebra as long as the abdomen, its valves black, filiform. ♂. Similar; antennæ half as long again as the body, 39-jointed. Length,  $1\frac{3}{4}$ —2; wings, 4— $4\frac{1}{2}$  lines.

Five specimens, including a ♂, were captured near Liège and Brussels, and described in Wesmael's Supplement. The species was not known to Haliday, and I believe it was first noticed in this country by myself. I obtained 5 or 6 of both sexes at the same place and time. They were beaten out of a dusty hedge, bordering the great north road, about two miles from St. Albans. This species constitutes the genus *Utetes*, Först.; it is remarkable for its colour, and the length of the terebra, but I am not able to discover any characters important enough to be considered generic. A closely allied species exists in N. America, specimens of which were sent to me from the Washington Museum, under the MS. name *Phædrotoma sanguinea*, Aslmead.

39. *Opius rufipes*, Wesm.

*O. rufipes*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 147; Hal., Ent. Mag., iv., 216, ♂.

Black; 2d abdominal segment more or less rufous. Face carinated; clypeus testaceous at the extremity, not touching the mandibles, which are rufous, as well as the palpi. Antennæ ♀ about one-half longer than the body, 36—37-jointed, all the joints short, the scape rufescent; antennæ of the ♂ 38—42-jointed. Mesothoracic sutures indicated by two smooth humeral impressions, effaced before reaching the middle of the disk. A subcircular fovea before the scutellum. Mesopleuræ with a crenulate furrow. Metathorax short, rugose. Wings hyaline; radial areolet nearly reaching the extremity; stigma and nervures fuscous; stigma somewhat elongate-oval, acute at the apex, emitting the radius exactly from the middle; 2d cubital areolet elongate, attenuated outwards; recurrent nervure rejected (in 4 females), interstitial according to Wesmael (in 2 males). Nervures of the hind wings distinct; præbrachial transverse nervure semicomplete. Legs rufo-testaceous; tarsi sometimes fuscous. Abdomen oval; 1st segment broad, short, rugose, black; 2d and following segments smooth, shining; 2d usually more or less piceous or rufescent at the base, but sometimes quite black, and in one specimen entirely rufo-testaceous. Terebra not surpassing the anus, directed upwards. Length, 1—1½; wings, 2½—4 lines.

The recurrent nervure is interstitial in the left wing of one ♂, in the right wing it is plainly rejected, and in both wings of my other specimens. Among the larger *Opii* this species may be known by the radius originating from the middle of the stigma. It is stated by Haliday to be very rare in North Ireland; it is not common in England, but has been found by Walker in the London district, by Capron at Shiere, and by me at Cornworthy, in Devonshire. According to Ratzeburg (Ichn. d. Forst., ii., 62), it was bred by Bouché from the lepidopterous *Coleophora nigricella*, Ste. Wesmael described an *O. caudatus* (*lib. cit.*, p. 142), which he was inclined to regard as the ♀ of this species; the terebra of *caudatus* was half as long as the abdomen, the facial carina more acute, and the mesothoracic sutures more rudimentary. This was probably not the true ♀ of *rufipes*, and I feel certain that the sexes above described belong to each other; they correspond in all respects, and were captured under the same circumstances.

40. *Opius comatus*, Wesm.

*O. comatus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 145, pl. ii., fig. 7 (wing); Hal., Ent. Mag., iv., 215, ♂ ♀.

♀. Black; head thinly beset with long hairs; face strongly carinated, piceous or sometimes testaceous in the middle, slightly rugulose; clypeus rounded in front, separated from the mandibles by a semicircular interval; palpi pale, elongate. Antennæ about as long as the body, 21—23-jointed, testaceous towards the base, the joints fusco-punctate at the apex, the terminal joints fuscous; 3d joint elongate. Mesothoracic sutures distinct, punctate, converging to a point before the scutellum, which is sometimes testaceous at the apex. Mesopleuræ with a deeply crenate furrow. Metathorax somewhat elongate, rugose, reticulated. Wings dull hyaline; squamula testaceous; nervures and stigma fusco-testaceous, the former very slender; radial areolet reaching the extremity of the wing; 2d cubital areolet hardly or not at all attenuated outwards; stigma narrow, lanceolate, emitting the radius from the middle; recurrent nervure interstitial; podiscoidal areolet subincomplete. Præbrachial transverse nervure of the hind wings inchoate. Legs testaceous; last joint of the tarsi blackish. Abdomen obovate, subdepressed; 1st segment rather long, obconic, rugulose, subcarinate in the middle, without visible tubercles; 2d segment sometimes faintly striated at the base; suturiform articulation marked by an indistinct channel, which is often testaceous; 3d and following segments black, shining. Terebra subexserted.

♂. Antennæ much longer than the body, slender, 29—31-jointed, testaceous towards the base; 3d joint very long. Head, including the oral parts, testaceous; stemmaticum and occiput fuscous. Prothorax testaceous, obscure on the sides. Under the base of the fore wings is often a dull testaceous spot, and another on the mesonotum; the mesothoracic sutures marked by two testaceous lines. Tubercles of the 1st abdominal segment more distinct than in the ♀; a large or small testaceous spot on the 2d segment. Length,  $\frac{3}{4}$ —1; wings,  $2\frac{1}{4}$ —3 lines.

Var. 1. Head and clypeus black; 3 apical segments of the abdomen rufo-testaceous. Wesmael.

Described by Wesmael from 4 females and 7 males, taken near Brussels. According to Haliday it is somewhat rare in shady groves of England and Ireland. I have captured several females, and Bignell a ♂, in Devonshire. This species forms the genus *Holconotus* of Förster.

## vi. BIOSTERES, Förster.

Först., Verh. pr. Rheinl., 1862, p. 259.

Clypeus reaching the mandibles and closing the mouth, except in *B. placidus*, Hal. Second cubital areolet, measured horizontally, shorter than in *Opius*, the 2d abscissa of the radius not exceeding in length the 1st intercubital nervure; stigma narrow, elongate, emitting the radius from the middle, or from a point just before the middle. The other characters are those of *Opius*. In *Diachasma* the clypeus does not reach the mandibles, and the stigma is shorter and thicker, emitting the radius generally from a point beyond the middle.

Ten British species may be assigned to the genus *Biosteres*; they include the largest of the present subfamily, and have a superficial resemblance to the Alysids, especially of the genus *Phanocarpa*. They have a certain facies which distinguishes them from *Opius* without the aid of artificial characters; but closer examination shows that this difference is mainly dependent upon size, and that their structure presents hardly any modification.

## TABLE OF SPECIES.

- |      |  |                               |
|------|--|-------------------------------|
| (18) | 1. Clypeus reaching the mandible and closing the mouth.  |                               |
| (5)  | 2. Mesopleuræ with a smooth impunctate furrow.   |                               |
| (4)  | 3. Abdominal segments 2—4 black, hard, and shining .. .. .   | 1. <i>carbonarius</i> , Nees. |
| (3)  | 4. Abdominal segments 2—4 fusco-testaceous, with a soft cuticle which shrinks after death, leaving transverse impressions upon the abdomen .. .. . | 2. <i>impressus</i> , Wesm.   |
| (2)  | 5. Mesopleuræ with a crenate or rugose furrow.   |                               |
| (7)  | 6. Scutellum smooth .. .. .  | 3. <i>bicolor</i> , Wesm.     |
| (6)  | 7. Scutellum rugulose or punctate, at least at the apex.   |                               |
| (11) | 8. Abdomen partly rufous.  |                               |
| (10) | 9. Scutellum entirely rugulose .. .. .   | 4. <i>hæmorrhoidis</i> , Hal. |
| (9)  | 10. Scutellum punctate at the apex .. .. .   | 5. <i>blandus</i> , Hal.      |
| (8)  | 11. Abdomen entirely black.  |                               |
| (13) | 12. Scutellum punctate at the apex .. .. .   | 6. <i>rusticus</i> , Hal.     |
| (12) | 13. Scutellum entirely rugulose.   |                               |
| (15) | 14. Vertex rugulose, dull; 3 longitudinal bands of similar rugosity on the mesothorax .. .. .  | 7. <i>scabriculus</i> , Wesm. |

- (14) 15. Vertex and mesothorax smooth, shining.  
 (17) 16. Third abscissa of the radius straight, or  
 with only a very slight bend at the ex-  
 tremity .. .. . 8. *Wesmælii*, Hal.  
 (16) 17. Third abscissa of radius curved, concave  
 beneath .. .. . 9. *sylvaticus*, Hal.  
 (1) 18. Clypeus not reaching the mandibles,  
 mouth open .. .. . 10. *placidus*, Hal.

1. *Biosteres carbonarius*, Nees. (Pl. II., fig. 7, ♂).

*Bracon carbonarius*, Nees, Mon., i., 58; *Opius carbo-*  
*narius*, Hal., Ent. Mag., iv., 218, ♂ ♀.

*Opius procerus*, Wesm., Nouv. Mém. Ac. Brux., 1835,  
 p. 156, ♂, pl. ii., fig. 12 (wing).

Black, shining; face punctate, with a strong carina; clypeus touching the mandibles, punctate, testaceous; palpi and mandibles testaceous, the latter broad, fuscous at the points. Antennæ much longer than the body, 43—44-jointed, ♂ ♀; black, with the under side of the scape testaceous. Mesothoracic sutures inchoate, effaced posteriorly. Mesopleuræ with a smooth impunctate furrow. Apex of the scutellum rugulose; before it is an oblong fovea. Metathorax rugulose. Wings hyaline; nervures fuscous; stigma paler fuscous, elongate, attenuated, emitting the radius just before the middle; 1st abscissa as long as the thickness of the stigma; 2d as long as the 1st intercubital nervure; 3d slightly curved, ending near the extremity of the wing; recurrent nervure evected. No vestige of a pobrachial transverse nervure in the hind wings. In the ♂ all the principal nervures of the fore wings are incrassated and darker. Legs testaceous; 2d joint of all the trochanters often rufescent; tips of the tarsi dusky; hind coxæ of the ♂ sometimes black at the base above. Abdomen oblong-ovate, broader in the ♀; 1st segment short, forming a truncated triangle, narrower in the ♂, rugulose, with a medial carina, which is bifurcate at the base, and a fovea on each side of the apex; the other segments smooth and shining. Terebra concealed. Length, 2—2½; wings, 4¾—5¾ lines.

Generally distributed throughout the country, and more often met with than the other species, yet by no means common. Bred, according to Brischke (Schr. Nat. Ges. Danzig, 1878, p. 107), from the maggots of *Pegomyia nigritarsis*, Zett.

2. *Biosteres impressus*, Wesm.

*Opius impressus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 157, ♂; Hal., Ent. Mag., iv., 218, ♂ ♀.

Rather smaller than the preceding, but with absolutely the same characters, except as regards the abdomen. The posterior half of the 2d, 3d, 4th, and 5th segments is marked (in dried specimens) with a deep transverse depression, which is dull testaceous. In the living insect there are no depressions, but testaceous bands, covered with a soft integument, which subsides irregularly after death. ♂ ♀. Length, 2—2½; wings, 4¾—5½ lines.

Not common; taken by Wesmael in Belgium, by Haliday in North and West Ireland, and by Walker in England. I captured 5 specimens at Cornworthy, in South Devon, and another in Wiltshire.

3. *Biosteres bicolor*, Wesm.

*Opius bicolor*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 151, ♂; Hal., Ent. Mag., iv., 220, ♂ ♀.

Black; abdomen, after the 1st segment, rufous. Face carinated; clypeus reaching the mandibles, its lower half testaceous, impressed in the middle with a transverse series of punctures; mandibles testaceous; palpi about as long as the head, testaceous. Antennæ ♂ longer than the body, 39-jointed, black; 1st joint rufo-testaceous beneath; all the joints short; antennæ ♀ not described. Mesothoracic sutures indicated by a short deep depression on each side of the mesothorax in front. Furrow of the mesopleuræ very superficial, formed of a series of slight transverse wrinkles. Metathorax finely rugulose. Wings hyaline; stigma dull rufo-testaceous; radial areolet reaching the extremity of the wing; 2d cubital areolet narrow; podiscoidal areolet complete. Legs rufo-testaceous. First abdominal segment black, rather shining, with a few longitudinal striæ; the rest of the abdomen smooth, rufo-testaceous. Terebra concealed. Length, 1—1½ line.

Only two examples seem to have occurred, a ♂ taken by Wesmael near Brussels, and a ♀ in North Ireland by Haliday; as the latter writer gives no description of the ♀, it may be presumed that the sexes are similar.

4. *Biosteres hæmorrhœus*, Hal. (Pl. II., fig. 8, ♀).

*Opius carbonarius*, var. 2, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 152, ♂ ♀.

*O. hæmorrhœus*, Hal., Ent. Mag., iv., 219, ♂ ♀; and 204, figs. a, b, ♂.

Black; posterior half of the abdomen rufous. Clypeus testaceous, touching the mandibles (*cf.* Hal., *l. c.*, fig. b); mandibles testaceous. Antennæ ♀ longer than the body, 41-jointed, scape rufous; antennæ ♂ not described. Mesothoracic sutures inchoate, effaced posteriorly. Scutellum entirely rugulose, preceded by an oblong fovea, which is surrounded by a few punctures. Mesopleuræ with a crenate furrow. Metathorax rugulose, subreticulate. Wings hyaline; squamula rufous; nervures fuscous; stigma fusco-testaceous, elongate, narrow, emitting the radius just before the middle; 1st abscissa as long as the 2d and much longer than the thickness of the stigma; 2d abscissa much shorter than the 1st intercubital nervure; 3d slightly curved, ending somewhat before the extremity of the wing; recurrent nervure slightly everted. Hind wings with no trace of a pabrachial transverse nervure. Legs rufo-testaceous, tarsi infuscated. Abdomen ♀ ovate, convex, black from the base to the suturiform articulation, the remainder rufous; 1st segment short, broad, striated, margined, with visible tubercles; the following segments smooth and shining. Terebra concealed. ♂. Second abdominal segment rufous towards the apex, 3d rufous on each side of the base; less frequently the 2d segment is rufous only on the sides, and the 3d entirely black. Length, 2; wings, 5 lines.

Var. 1. Stigma fuscous; 2d segment at the extremity, and the following segments, rufo-piceous, banded with black.

This fine species is quite distinct from *carbonarius*, Nees (sp. 1), and more resembles *Wesmaëlii*, Hal. (sp. 8); it is, however, much larger, and distinguished by the colours of the abdomen; the 1st abscissa of the radius is also much longer in proportion. Wesmael captured many specimens near Charleroi and Brussels; Walker found both sexes in the London district; and Haliday a ♀ on a willow in North Ireland; a ♀ is in my collection, which was taken near St. Albans.

5. *Biosteres blandus*, Hal.

*Opius blandus*, Hal., Ent. Mag., iv., 220, ♂ ♀.

♀. Black; abdomen partly rufous. Head very broad, rufous, orbits and cheeks more obscure, stemmaticum black; face punctate, with a medial carina; clypeus hairy, rufous, touching the mandibles; palpi rather short, testaceous. Antennæ shorter than the body, black, the scape rufous beneath. Thorax smooth and shining; mesothoracic sutures inchoate. Scutellum coarsely punctate at the apex, preceded by a small fovea. Mesopleuræ with a wide cancellated furrow. Metathorax rugulose, smoother in the middle. Wings hyaline; squamula testaceous; nervures fuscous; stigma fusco-testaceous, emitting the radius nearly in the middle. Legs short, rufo-testaceous; femora stout; extreme apex of the hind tibiæ, and their tarsi, fuscous. Abdomen ovate; 1st segment black, hardly narrowed at the base, rugulose, with a longitudinal carina, which is bifurcate at the base; 2d and following segments rufo-piceous; 3d and following segments banded with black. Terebra concealed. ♂. Larger than the ♀, the rufous portions clearer; head rufous, stemmaticum and occiput black; antennæ hardly shorter than the body, 41-jointed; abdomen more oblong, 2d segment rufous, the rest fuscous. Length hardly 2 lines.

Described by Haliday from one ♀ and a few males taken in May on willows in North Ireland. Förster has made of this species a separate genus *Chilotrichia*, on account of the hairiness of the clypeus.

6. *Biosteres rusticus*, Hal.

*Opius rusticus*, Hal., Ent. Mag., iv., 218, ♀.

Black; clypeus and mandibles testaceous; mouth closed. Antennæ ♂ much longer than the body, slender, 38-jointed, black, the scape rufous; antennæ of the ♀ not described. Prothorax and mesopleuræ vaguely punctate with large punctures; the latter impressed with a rugose furrow. Mesothorax rugulose in front, the sutures subcomplete, punctate. A foveola before the scutellum, which is punctate at the apex. Metathorax rugose. Wings hyaline; squamula rufo-testaceous; stigma and nervures fuscous; stigma very long and narrow, emitting the radius from a point just before the middle; 1st abscissa longer than the thickness of the stigma. Legs testaceous. The rest of the characters are those of *carbonarius* (sp. 1). Length,  $1\frac{1}{2}$ ; wings,  $3\frac{1}{2}$  lines.



This is distinguishable from *carbonarius* by its smaller size, the rugose furrow of the mesopleuræ, and the inequalities and rugosity of portions of the thorax; from *scabriculus*, *Wesmaëlii*, and *sylvaticus* (spp. 7, 8, 9), by longer antennæ, the fainter sculpture of the thorax, the longer stigma, the insertion of the radius, and the greater length of the radial areolet. Taken rarely by Haliday in North Ireland on *Brassica rapa*. The specimen I possess is a ♂, found by Bignell in Devonshire.

#### 7. *Biosteres scabriculus*, Wesm.

*Opius scabriculus*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 154, ♀; Hal., Ent. Mag., iv., 218, ♂ ♀.

Black; head and thorax scabrous; legs varied with black. Head pubescent; face finely carinated, and, together with the greater part of the cheeks and vertex, scabrous, not shining; mandibles rufous; palpi dusky. Antennæ ♀ black, 33-jointed, as long as the body; those of the ♂ not described. Mesothorax with 3 longitudinal scabrous parallel lines on the disk; humeral angles, and sides in front, similarly scabrous. Mesopleuræ with no furrow, but a broad rugulose space instead, hardly depressed below the surface. Scutellum and metathorax rugulose. Wings hyaline; stigma dull testaceous, elongate, narrow, linear. Coxæ and 1st joint of the trochanters black; 2d joint, femora, and tibiæ, rufotestaceous; 4 anterior femora streaked on the upper edge with blackish; hind femora blackish above and on the sides; tips of hind tibiæ and all the tarsi fuscous. Abdomen narrow, elongate; 1st segment longitudinally rugose, with a fine medial carina; the following segments smooth and shining; in the ♂ segments 2, 3, 4 are furnished before the apex each with two minute whitish spines. Terebra as long as  $\frac{1}{2}$  of the abdomen. Length,  $1\frac{3}{4}$  line.

Only two specimens seem to have been taken, a ♀ near Brussels, described by Wesmael, and a ♂ indicated by Haliday, which was sent to him from England, probably from the London district, by Walker.

#### 8. *Biosteres Wesmaëlii*, Hal.

*Opius carbonarius*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 152 (partly; not of Nees or Haliday; and not the varieties).

*O. Wesmaëlii*, Hal., Ent. Mag., iv., 219, ♂ ♀.

Black; face strongly carinated, punctate; clypeus reaching the mandibles, testaceous, sometimes black at the base, punctate; mandibles rufous; palpi testaceous. ♂ ♀. Antennæ longer than the body, 37—39-jointed, black, the scape rufous. Mesothoracic sutures inchoate, effaced posteriorly. An oblong fovea before the scutellum, which is rugulose, like the metathorax. Wings hyaline; squamula testaceous; nervures fuscous; stigma fusco-testaceous, darker in the ♂, emitting the radius from the middle; 1st abscissa not half as long as the 2d, and not longer than the width of the stigma; 2d abscissa and 1st intercubital nervure about equal in length; 3d abscissa straight, ending rather before the extremity of the wing; recurrent nervure slightly everted. No trace of a pobrachial transverse nervure in the hind wings. Legs rufo-testaceous; coxæ sometimes infuscated at the base above; tips of tarsi dusky. First abdominal segment longitudinally rugose, sometimes faintly carinated in the middle. Terebra concealed. Length,  $1\frac{1}{2}$ ; wings,  $3\frac{1}{2}$  lines.

According to Haliday, not uncommon in North Ireland during May and June; also found in England by Walker, and twice by me in Leicestershire. It closely resembles the following species, but the difference of the wings renders their separation necessary.

#### 9. *Biosteres sylvaticus*, Hal.

*Opius sylvaticus*, Hal., Ent. Mag., iv., 219, ♂ ♀.

More slender than the preceding, but otherwise indistinguishable, except by the wings. Stigma fusco-testaceous, emitting the radius before the middle; 3d abscissa curved, concave beneath, approaching nearer to the extremity of the wing than in *Wesmaëlii*; hence the radial areolet is more cultrate and longer in proportion; 2d cubital areolet horizontally longer and vertically narrower. In the ♂, as in the cognate species, the principal nervures are incrassated and darker. Length,  $1\frac{1}{2}$ ; wings,  $3\frac{1}{2}$  lines.

According to Haliday, much rarer in North Ireland than the last species; Walker detected the ♂ in England, and I possess both sexes captured near Abergavenny, and Nunton, in Wilts.

#### 10. *Biosteres placidus*, Hal.

*Opius placidus*, Hal., Ent. Mag., iv., 217, ♀.

Black; base of 2d abdominal segment rufous. Face carinated; oral parts rufo-testaceous; clypeus not touching the mandibles.

Antennæ longer than the body, 38-jointed, black, the scape piceous beneath. Mesothoracic sutures inchoate, effaced posteriorly. A foveola before the scutellum. Mesopleuræ with an impunctate furrow. Metathorax finely rugulose. Wings hyaline; squamula testaceous; nervures fuscous; stigma fusco-testaceous, linear, very long, emitting the radius before  $\frac{1}{3}$  of its length. Legs rufotestaceous; coxæ black at the base; hind tarsi, and apex of their tibiæ, fuscous. Abdomen ovate; 1st segment striated; 2d rufous at the base, its posterior portion, and all the following segments, piceous. Terebra concealed. Male unknown. Length,  $1\frac{1}{2}$  line.

Taken only once by Haliday in North Ireland; it seems not to have occurred since. Förster has made of it the genus *Rhabdospilus*.

vii. DIACHASMA, Förster.

Först., Verh. pr. Rheinl., 1862, p. 259.

Characters of *Opius*, except that the 2d cubital areolet, measured horizontally, is shorter, the 2d abscissa of the radius not exceeding in length the 1st intercubital nervure, and the stigma is short, ovate, or subtriangular. The shortness of the stigma alone separates *Diachasma* from *Biosteres*. The radius, according to Förster, should originate beyond the middle of the stigma; but the rigour of this restriction excludes two species, and would lead to the formation of two new genera for their reception. To avoid this, I have ventured so far to enlarge the limits of *Diachasma* as to leave the origin of the radius undetermined. Of the four species brought together under this denomination, two, viz., *caffer* and *rugosa*, are not provided for in Förster's synoptical table; it may be presumed that they were unknown to him, or he would have been obliged, on his own principles, to make a separate genus for each.

TABLE OF SPECIES.

- (2) 1. First abdominal segment smooth and shining .. .. 1. *caffer*, Wesm.  
 (1) 2. First abdominal segment rugulose.  
 (6) 3. Second and third abdominal segments smooth.  
 (5) 4. Abdomen, after the 1st segment, black .. 2. *cephalotes*, Wesm.

- (4) 5. Abdomen, after the 1st segment, in great part rufo-testaceous .. .. 3. *fulgida*, Hal.  
 (3) 6. Second abdominal segment and great part of the third deeply striated .. .. 4. *rugosa*, Wesm.

1. *Diachasma caffer*, Wesm.

*Opius caffer*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 150; Hal., Ent. Mag., iv., 217, ♂ ♀.

Black, shining; face strongly carinated; clypeus short, not reaching the mandibles, its lower edge rounded and somewhat raised; mandibles dull rufous in the middle, scarcely wider at the base; palpi short, black. Antennæ ♀ rather shorter than the body, 29-jointed; of the ♂ somewhat longer, 32-jointed; all the joints black, short. Mesothoracic sutures inchoate. A large oval fovea before the scutellum. Mesopleuræ smooth and shining, with hardly a fovea, but a short narrow series of 3 or 4 punctures. Metathorax smooth. Wings slightly infumated; stigma and nervures fuscous; 3d abscissa of the radius subobsolete towards the end (*cf. Ademon decrescens, ante*); if complete, it would reach the margin of the wing somewhat before the extremity; stigma oval, emitting the radius from the middle; 2d abscissa much shorter than the 1st intercubital nervure, and much longer than the 2d; recurrent nervure everted. Hind wings with a distinct pobrachial transverse nervure. Legs black; base of hind tibiæ in the ♀ dull rufous; hind femora somewhat incrassated and compressed; sometimes the legs are dull rufous, the femora black above, and the tarsi infuscated. Abdomen oval, entirely free from rugosity; 1st segment short, with two lateral channels, the disk raised, smooth and shining. Terebra exerted to the extent of  $\frac{1}{4}$  of the abdomen. Length,  $1\frac{1}{2}$ ; wings, 3 lines.

Both sexes were discovered by Wesmael near Brussels, and found also by Walker in the London district; I have taken the ♂ in Epping Forest.

2. *Diachasma cephalotes*, Wesm.

*Opius cephalotes*, Wesm., Nouv. Mém. Ac. Brux., 1835, p. 149, ♀ (not of Ratzeburg, which is a *Cenocælius*).

Black; vertical and occipital orbits of the eyes rufous. Head large, broader than the thorax; face carinated, vaguely punctured; clypeus not reaching the mandibles, deplanate, punctate, circumscribed by an impressed semicircular line, its lower edge straight,

obsoletely margined; mandibles rufous; palpi dusky. Antennæ ♂ ♀ hardly longer than the body, stout, setose, tapering outwards, 36—37-jointed, all the joints short; black, base of scape dull rufous. Mesothoracic sutures complete, deeply impressed, crenulate, meeting in an acute angle before the scutellum. Mesopleuræ with a long furrow, deeply crenate. Metathorax rugose. Wings rather short, slightly infumated; radial areolet short, ending just before the extremity of the wing; stigma and nervures blackish; stigma oval, emitting the radius beyond the middle; recurrent nervure interstitial. Hind wings with a distinct pobrachial transverse nervure. Legs stout, rufo-testaceous; upper side of coxæ, 1st joint of trochanters, and tarsi towards the tips, blackish. Abdomen oblong, rather narrow, with subparallel sides; longer in the ♂, and truncate at the extremity; 1st segment rugulose, not much widened posteriorly, indistinctly carinated in the middle, with visible tubercles. Terebra not surpassing the anus. Length, 2; wings, 4 lines.

Wesmael described a mutilated ♀ found near Brussels; the species was not known to Haliday. Both sexes occurred sparingly in a hedge near Nunton, in Wilts, where several were taken by Dr. Capron and myself.

### 3. *Diachasma fulgida*, Hal. (Pl. II., fig. 9, ♂).

*Opius fulgidus*, Hal., Ent. Mag., iv., 217, ♀.

♂. Variable; rufous, metathorax, pectus, 1st abdominal segment, and a transverse band on each of the following segments, blackish; wings infuscated; form robust. Head rufous; palpi piceous; clypeus not touching the mandibles. Antennæ longer than the body, 37-jointed, black, scape piceous beneath. Disk of mesothorax rufous, its sutures impunctate, obsolete behind the middle. A shallow fovea before the scutellum. Mesopleuræ rufo-piceous, with a strongly crenate furrow. Scutellum and metathorax black, the latter coarsely rugose. Wings infuscated; nervures and stigma blackish, the latter very large, ovate, lanceolate, emitting the radius beyond the middle; 1st abscissa obliterated by the stigma, punctiform; 2d as long as the 1st intercubital nervure and much longer than the 2d; 3d abscissa straight, nearly reaching the extremity of the wing; recurrent nervure interstitial. Hind wings with a distinct pobrachial transverse nervure. Legs rather stout, rufo-testaceous; last joint of tarsi fuscous. Abdomen ovate-orbiculate; 1st segment oblong, rugulose, blackish; the following segments rufo-testaceous, cinctured with fuscous bands more

or less confluent. Female not known. Length,  $1\frac{2}{3}$ ; wings,  $3\frac{3}{4}$  lines.

Var. 1. The colours given above are those of Haldiday's specimen, discovered by Walker in the I. of Wight. A ♂ which I took in Epping Forest differs somewhat:—Head black; mesothorax dark piceous, rufescent in the middle; scutellum and metathorax piceo-rufous; this is the specimen copied in the plate.

This species, if I am not mistaken, has been also found at Shiere by Dr. Capron; it is apparently rare everywhere, and has never been observed on the Continent.

#### 4. *Diachasma rugosa*, Wesm.

*Opius rugosus*, Wesm., Nouv. Mém. Ac. Brux., 1838, p. 147, ♀.

♀. Variable; head rufous; the rest of the body ochreous, more or less obscure, and sometimes quite black above; form robust. Upper part of face carinated; clypeus not quite touching the mandibles, its margin straight; stemmaticum and tips of mandibles black. Antennæ longer than the body, slender, filiform, 33-jointed, black; scape more or less rufous. Mesothoracic sutures deeply impressed, punctulate, effaced posteriorly. No punctiform impression before the scutellum. A coarsely punctured space on the mesopleuræ instead of the usual furrow. Mesothorax coarsely rugose, subcarinate in the middle. Wings hyaline; squamula ochreous; nervures and stigma fuscous; the latter oval, acuminate, emitting the radius a little before the middle; 1st abscissa very short; 2d as long as the 1st intercubital nervure, or even a little longer; 3d straight, almost attaining the extremity of the wing; recurrent nervure everted. Hind wings with no trace of a pobrachial transverse nervure. Legs stout, ochreous; tips of tarsi infuscated. Abdomen short, oval, not longer and hardly wider than the thorax; 1st segment as broad as long, somewhat widened behind, deeply and longitudinally striated, with raised lateral margins and a medial carina; from the base of the 2d segment the abdomen is widened and rounded at the sides to the end of the 3d segment, whence it diminishes rapidly to the anus; 2d segment deeply striated like the 1st; 3d segment more finely striated, its apical margin and the rest of the abdomen smooth and shining. Terebra as long as  $\frac{1}{3}$  or  $\frac{1}{4}$  of the abdomen. Male unknown. Length  $1\frac{1}{2}$ ; wings nearly 4 lines.

Wesmael's description was made from a specimen apparently female, with the antennæ and terebra broken,

and which he obtained from Liège. The insect was not met with again, to my knowledge, until Mr. Bridgman sent me a specimen from his neighbourhood; and singularly enough, while the above description was in progress, I obtained another by beating a hedge not far from this house, in Cornwall. This last example is more highly coloured, and almost black on the head and thorax.

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EXPLANATION OF PLATE II.

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- FIG. 1. *Ademon decrescens*, Nees, ♀.  
2. *Gnamptodon pumilio*, Nees, ♀.  
3. *Hedylus habilis*, Marsh., ♂.  
4. Wing of *Eurytenes abnormis*, Wesm.  
5. Wing of *Opius nitidulator*, Nees.  
6. *Opius testaceus*, Wesm., ♀.  
7. *Biosteres carbonarius*, Nees, ♂.  
8. *B. hæmorrhôis*, Hal., ♀.  
9. *Diachasma fulgida*, Hal., ♂.